

## I. SINGLE- AND MULTI-PITCH ESTIMATION

- [1] S. I. Adalbjörnsson, A. Jakobsson, and M. G. Christensen. “Estimating Multiple Pitches Using Block Sparsity”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2013, pp. 6220–6224.
- [2] S. I. Adalbjörnsson, A. Jakobsson, and M. G. Christensen. “Multi-Pitch Estimation Exploiting Block Sparsity”. In: *Signal Processing* 109 (Apr. 2015), pp. 236–247.
- [3] L. Armani and M. Omologo. “Weighted autocorrelation-based f0 estimation for distant-talking interaction with a distributed microphone network”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 1. 2004, pp. 113–116.
- [4] R. Badeau, V. Emiya, and B. David. “Expectation-maximization algorithm for multi-pitch estimation and separation of overlapping harmonic spectra”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2009, pp. 3073–3076.
- [5] D. Chazan, Y. Stettiner, and D. Malah. “Optimal multi-pitch estimation using the EM algorithm for co-channel speech separation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 2. 1993, pp. 728–731. DOI: 10.1109/ICASSP.1993.319415.
- [6] A. de Cheveigné and H. Kawahara. “YIN, a fundamental frequency estimator for speech and music”. In: *J. Acoust. Soc. Am.* 111(4) (Apr. 2002), pp. 1917–1930.
- [7] M. G. Christensen. “A Method for Low-Delay Pitch Tracking and Smoothing”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2012, pp. 345–348.
- [8] M. G. Christensen. “Accurate Estimation of Low Fundamental Frequencies”. In: *IEEE Trans. Audio, Speech, Language Process.* 21(10) (2013), pp. 2042–2056.
- [9] M. G. Christensen. “An Exact Subspace Method For Fundamental Frequency Estimation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2013, pp. 6802–6806.
- [10] M. G. Christensen. “Multi-Channel Maximum Likelihood Pitch Estimation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2012, pp. 409–412.
- [11] E. Conte, A. Filippi, and S. Tomasin. “ML Period Estimation With Application to Vital Sign Monitoring”. In: *IEEE Signal Process. Lett.* 17.11 (2010), pp. 905–908. DOI: 10.1109/LSP.2010.2071382.
- [12] M. Davy, S. Godsill, and J. Idier. “Bayesian Analysis of Western Tonal Music”. In: *J. Acoust. Soc. Am.* 119(4) (Apr. 2006), pp. 2498–2517.
- [13] Manuel Davy. “Multiple Fundamental Frequency Estimation Based on Generative Models”. In: *Signal Processing Methods for Music Transcription.* 2006, pp. 203–227.
- [14] D. J. Hermes. “Measurement of pitch by subharmonic summation”. In: *J. Acoust. Soc. Am.* 83(1) (1988), pp. 257–264.
- [15] W. Hess. “Pitch and Voicing Determination”. In: *Advances in Speech Signal Processing.* Ed. by S. Furui and M. M. Sohndi. Marcel Dekker, New York, 1992, pp. 3–48.
- [16] W. Hess. *Pitch Determination of Speech Signals.* Springer-Verlag, Berlin, 1983.
- [17] J. K. Nielsen, M. G. Christensen, and S. H. Jensen. “An Approximate Bayesian Fundamental Frequency Estimator”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2012, pp. 4617–4620.
- [18] J. K. Nielsen, M. G. Christensen, and S. H. Jensen. “Default Bayesian Estimation of the Fundamental Frequency”. In: *IEEE Trans. Audio, Speech, Language Process.* 21(3) (2013), pp. 598–610.
- [19] J. K. Nielsen, T. L. Jensen, J. R. Jensen, M. G. Christensen, and S. H. Jensen. “A Fast Algorithm for Maximum Likelihood-based Fundamental Frequency Estimation”. In: *Proc. European Signal Processing Conf.* 2015.
- [20] J. K. Nielsen, T. L. Jensen, J. R. Jensen, M. G. Christensen, and S. H. Jensen. “Fast and Statistically Efficient Fundamental Frequency Estimation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2016, pp. 86–90.
- [21] J. R. Jensen, J. K. Nielsen, M. G. Christensen, S. H., Jensen and T. Larsen. “On Fast Implementation of Harmonic MUSIC for Known and Unknown Model Orders”. In: *Proc. European Signal Processing Conf.* 2008.
- [22] J. R. Jensen, M. G. Christensen and S. H. Jensen. “A Single Snapshot Optimal Filtering Method for Fundamental Frequency Estimation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2011, pp. 4272–4275.
- [23] J. R. Jensen, M. G. Christensen, and S. H. Jensen. “Fundamental Frequency Estimation using Polynomial Rooting of a Subspace-Based Method”. In: *Proc. European Signal Processing Conf.* 2010.
- [24] J. X. Zhang, M. G. Christensen, S. H. Jensen, and M. Moonen. “A Robust and Computationally Efficient Subspace-based Fundamental Frequency Estimator”. In: *IEEE Trans. Audio, Speech, Language Process.* 18(3) (2010), pp. 487–497.
- [25] J. R. Jensen et al. “Fast LCMV-based Methods for Fundamental Frequency Estimation”. In: *IEEE Trans. Signal Process.* 61(12) (2013), pp. 3159–3172.
- [26] A. Klapuri. “Multiple fundamental frequency estimation based on harmonicity and spectral smoothness”. In: *IEEE Trans. Speech Audio Process.* 11(6) (2003), pp. 804–816.
- [27] D. Kundu and S. Nandi. “A note on estimating the fundamental frequency of a periodic function”. In: *Signal Processing* 84 (2004), pp. 653–661.
- [28] H. Li, P. Stoica, and J. Li. “Computationally efficient parameter estimation for harmonic sinusoidal signals”. In: *Signal Processing* 80 (2000), pp. 1937–1944.
- [29] M. G. Christensen, A. Jakobsson and S. H. Jensen. “Fundamental Frequency Estimation using the Shift-Invariance Property”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers.* 2007, pp. 631–635.

- [30] M. G. Christensen, A. Jakobsson and S. H. Jensen. “Joint High-Resolution Fundamental Frequency and Order Estimation”. In: *IEEE Trans. Audio, Speech, Language Process.* 15(5) (2007), pp. 1635–1644.
- [31] M. G. Christensen, A. Jakobsson and S. H. Jensen. “Multi-Pitch Estimation using Harmonic MUSIC”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers*. 2006, pp. 521–525.
- [32] M. G. Christensen and A. Jakobsson. “Improved Subspace-based Frequency Estimation for Real-Valued Data using Angles between Subspaces”. In: *Proc. European Signal Processing Conf.* 2010.
- [33] M. G. Christensen and A. Jakobsson. *Multi-Pitch Estimation*. Vol. 5. Synthesis Lectures on Speech & Audio Processing. 160 pages. Morgan & Claypool Publishers, 2009, p. 160. ISBN: 9871598298383.
- [34] M. G. Christensen, J. L. Højvang, A. Jakobsson, and S. H. Jensen. “Joint Fundamental Frequency and Order Estimation using Optimal Filtering”. In: *EURASIP J. on Advances in Signal Process.* 2011(1) (2011), pp. 1–13. ISSN: 1687-6180.
- [35] M. G. Christensen, P. Stoica, A. Jakobsson and S. H. Jensen. “Multi-Pitch Estimation”. In: *Signal Processing* 88(4) (Apr. 2008), pp. 972–983.
- [36] M. G. Christensen, P. Stoica, A. Jakobsson and S. H. Jensen. “The Multi-Pitch Estimation Problem: Some New Solutions”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 3. 2007, pp. 1221–1224.
- [37] M. G. Christensen, P. Vera-Candeas, S. D. Somasundaram and A. Jakobsson. “Robust Subspace-based Fundamental Frequency Estimation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2008, pp. 101–104.
- [38] M. G. Christensen, S. H. Jensen, S. V. Andersen and A. Jakobsson. “Subspace-based Fundamental Frequency Estimation”. In: *Proc. European Signal Processing Conf.* 2004, pp. 637–640.
- [39] M. W. Hansen, J. R. Jensen, and M. G. Christensen. “Estimation of Multiple Pitches in Stereophonic Mixtures using a Codebook-based Approach”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2017.
- [40] M. W. Hansen, J. R. Jensen, and M. G. Christensen. “Multi-Pitch Estimation of Audio Recordings Using a Codebook-Based Approach”. In: *Proc. European Signal Processing Conf.* 2016.
- [41] M. W. Hansen, J. R. Jensen, and M. G. Christensen. “Pitch Estimation of Stereophonic Mixtures of Delay and Amplitude Panned Signals”. In: *Proc. European Signal Processing Conf.* 2015.
- [42] Y. Medan, E. Yair, and D. Chazan. “Super resolution pitch determination of speech signals”. In: *IEEE Trans. Signal Process.* 39.1 (1991), pp. 40–48. DOI: 10.1109/78.80763.
- [43] A. Nehorai and B. Porat. “Adaptive Comb Filtering for Harmonic Signal Enhancement”. In: *IEEE Trans. Acoust., Speech, Signal Process.* 34(5) (Oct. 1986), pp. 1124–1138.
- [44] J. K. Nielsen et al. “Fast fundamental frequency estimation: Making a statistically efficient estimator computationally efficient”. In: *Signal Processing* 135 (2017), pp. 188–197.
- [45] A. M. Noll. “Cepstrum pitch determination”. In: *J. Acoust. Soc. Am.* 41(2) (1967), pp. 293–309.
- [46] M. Noll. “Pitch Determination of Human Speech by Harmonic Product Spectrum, the harmonic sum, and a maximum likelihood estimate”. In: *Proc. Symposium on Computer Processing Communications*. 1969, pp. 779–797.
- [47] G. Ogden et al. “Frequency domain tracking of passive vessel harmonics”. In: *J. Acoust. Soc. Am.* 126 (2009), p. 2249.
- [48] L. Rabiner. “On the use of autocorrelation analysis for pitch detection”. In: *IEEE Transactions on Acoustics, Speech and Signal Processing* 25.1 (1977), pp. 24–33.
- [49] M. Ross et al. “Average magnitude difference function pitch extractor”. In: *IEEE Trans. Acoust., Speech, Signal Process.* 22.5 (Oct. 1974), pp. 353–362.
- [50] S. Karimian-Azari, A. Jakobsson, J. R. Jensen, and M. G. Christensen. “Multi-Pitch Estimation and Tracking Using Bayesian Inference in Block Sparsity”. In: *Proc. European Signal Processing Conf.* 2015.
- [51] S. Karimian-Azari, J. R. Jensen and M. G. Christensen. “Robust Pitch Estimation Using an Optimal Filter on Frequency Estimates”. In: *Proc. European Signal Processing Conf.* 2014, pp. 1557–1561.
- [52] S. Karimian-Azari, N. Mohammadiha, J. R. Jensen and M. G. Christensen. “Pitch Estimation and Tracking with Harmonic Emphasis On The Acoustic Spectrum”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2015, pp. 4330–4334.
- [53] L. Shi et al. “A Kalman-based Fundamental Frequency Estimation Algorithm”. In: *Proc. IEEE Workshop on Appl. of Signal Process. to Aud. and Acoust.* IEEE Press. 2017, pp. 314–318.
- [54] L. Shi et al. “Multipitch Estimation Using Block Sparse Bayesian Learning and Intra-block Clustering”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* IEEE. 2018.
- [55] H.C. So et al. “Linear prediction approach for efficient frequency estimation of multiple real sinusoids: algorithms and analyses”. In: *IEEE Trans. Signal Process.* 53.7 (2005), pp. 2290–2305. DOI: 10.1109/TSP.2005.849154.
- [56] J. Tabrikian, S. Dubnov, and Y. Dickalov. “Maximum a posteriori probability pitch tracking in noisy environments using harmonic model”. In: *IEEE Trans. Audio, Speech, Language Process.* 12(1) (2004), pp. 76–87.
- [57] D. Talkin. “A robust algorithm for pitch tracking (RAPT)”. In: *Speech Coding and Synthesis*. Ed. by W. B. Kleijn and K. K. Paliwal. Elsevier Science B.V., 1995. Chap. 5, pp. 495–518.

## II. HARMONIC CHIRP ESTIMATION

- [1] Y. Doweck, A. Amar, and I. Cohen. “Joint Model Order Selection and Parameter Estimation of Chirps

- With Harmonic Components”. In: *IEEE Trans. Signal Process.* 63.7 (2015), pp. 1765–1778. ISSN: 1053-587X. DOI: 10.1109/TSP.2015.2391075.
- [2] J. K. Nielsen, T. L. Jensen, J. R. Jensen, M. G. Christensen, and S. H. Jensen. “Fast Harmonic Chirp Summation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2017.
- [3] T. L. Jensen et al. “A Fast Algorithm for Maximum Likelihood Estimation of Harmonic Chirp Parameters”. In: *IEEE Trans. Signal Process.* 65.19 (2017).
- [4] M. G. Christensen and J. R. Jensen. “Pitch Estimation for Non-Stationary Speech”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers.* 2014, pp. 1400–1404.
- [5] X. Meng et al. “Estimation of chirp signals with time-varying amplitudes”. In: *Signal Processing* (2018).
- [6] F. Myburg, A. C. den Brinker, and S. van Eijndhoven. “Multi-Component Chirp Analysis in Parametric Audio Coding”. In: *Fourth IEEE Benelux Signal Processing Symposium.* 2004.
- [7] Y. Pantazis, O. Rosec, and Y. Stylianou. “Chirp rate estimation of speech based on a time-varying quasi-harmonic model”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2009, pp. 3985–3988. DOI: 10.1109/ICASSP.2009.4960501.
- [8] S. M. Nørholm, J. R. Jensen, and M. G. Christensen. “Instantaneous Pitch Estimation with Optimal Segmentation for Non-Stationary Voiced Speech”. In: *IEEE Trans. Audio, Speech, Language Process.* 24(12) (2016), pp. 2354–2367.
- ### III. SPEECH ENHANCEMENT
- [1] J. Chen et al. “New insights into the noise reduction Wiener filter”. In: *IEEE Trans. Audio, Speech, Language Process.* 14.4 (2006), pp. 1218–1234. ISSN: 1558-7916. DOI: 10.1109/TSA.2005.860851.
- [2] M. G. Christensen et al. “Spatio-Temporal Filtering Methods for Enhancement and Separation of Speech Signals”. In: *Proc. IEEE China Summit & Int. Conf. on Signal and Information Process.* 2013, pp. 303–307.
- [3] B. Cornelis et al. “Theoretical Analysis of Binaural Multimicrophone Noise Reduction Techniques”. In: *IEEE Trans. Audio, Speech, Language Process.* 18.2 (2010), pp. 342–355. ISSN: 1558-7916. DOI: 10.1109/TASL.2009.2028374.
- [4] S. Doclo and M. Moonen. “GSVD-based optimal filtering for single and multimicrophone speech enhancement”. In: *IEEE Trans. Signal Process.* 50(9) (2002), pp. 2230–2244. DOI: 10.1109/TSP.2002.801937.
- [5] J. R. Jensen, J. Benesty, and M. G. Christensen. “Noise Reduction with Optimal Variable Span Linear Filter”. In: *IEEE Trans. Audio, Speech, Language Process.* 24(4) (2016), pp. 631–644.
- [6] J. R. Jensen, J. Benesty, M. G. Christensen, and S. H. Jensen. “Enhancement of Single-Channel Periodic Signals in the Time-Domain”. In: *IEEE Trans. Audio, Speech, Language Process.* 20(7) (2012), pp. 1948–1963.
- [7] J. R. Jensen, J. Benesty, M. G. Christensen, and S. H. Jensen. “Non-Causal Time-Domain Filters for Single-Channel Noise Reduction”. In: *IEEE Trans. Audio, Speech, Language Process.* 20(5) (2012), pp. 1526–1541.
- [8] J. R. Jensen, M. G. Christensen, and A. Jakobsson. “Harmonic Minimum Mean Squared Error Filters for Multichannel Speech Enhancement”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2017.
- [9] J. R. Jensen, M. G. Christensen, and S. H. Jensen. “An Optimal Spatio-Temporal Filter for Extraction and Enhancement of Multi-Channel Periodic Signals”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers.* 2010, pp. 1846–1850.
- [10] J. R. Jensen, M. G. Christensen, J. Benesty, and S. H. Jensen. “Joint Filtering Scheme for Nonstationary Noise Reduction”. In: *Proc. European Signal Processing Conf.* 2012, pp. 2323–2327.
- [11] J. Jensen and J. H. L. Hansen. “Speech enhancement using a constrained iterative sinusoidal model”. In: *IEEE Trans. Speech Audio Process.* 9 (Oct. 2001), pp. 731–740.
- [12] M. Krawczyk and T. Gerkmann. “STFT Phase Reconstruction in Voiced Speech for an Improved Single-Channel Speech Enhancement”. In: *IEEE/ACM Trans. Audio, Speech, Lang. Process.* 22.12 (2014), pp. 1931–1940. ISSN: 2329-9290. DOI: 10.1109/TASLP.2014.2354236.
- [13] Junfeng Li et al. “Two-stage binaural speech enhancement with Wiener filter for high-quality speech communication”. In: *Speech Communication* 53.5 (2011). Perceptual and Statistical Audition, pp. 677–689. ISSN: 0167-6393. DOI: <http://dx.doi.org/10.1016/j.specom.2010.04.009>. URL: <http://www.sciencedirect.com/science/article/pii/S0167639310000981>.
- [14] M. G. Christensen and A. Jakobsson. “Optimal Filter Designs for Separating and Enhancing Periodic Signals”. In: *IEEE Trans. Signal Process.* 58(12) (2010), pp. 5969–5983.
- [15] M. G. Christensen and A. Jakobsson. “Optimal Filters for Extraction and Separation of Periodic Sources”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers.* 2009, pp. 376–379.
- [16] M. S. Kavalekalam, M. G. Christensen, and J. B. Boldt. “Binaural Speech Enhancement using a Codebook based Approach”. In: *Proc. Int. Workshop on Acoustic Signal Enhancement.* 2016.
- [17] M. S. Kavalekalam, M. G. Christensen, and J. B. Boldt. “Model based Binaural Enhancement of Voiced and Unvoiced Speech”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2017.
- [18] N. Mohammadiha, P. Smaragdis, and A. Leijon. “Supervised and unsupervised speech enhancement using nonnegative matrix factorization”. In: *IEEE Trans. Audio, Speech, Language Process.* 21.10 (2013), pp. 2140–2151.
- [19] S. M. Nørholm, J. R. Jensen, and M. G. Christensen. “On the Influence of Inharmonicities in Model-Based

- Speech Enhancement”. In: *Proc. European Signal Processing Conf.* 2013, pp. 1–5.
- [20] S. M. Nørholm, J. R. Jensen, and M. G. Christensen. “Spatio-Temporal Audio Enhancement Based on IAA Noise Covariance Matrix Estimates”. In: *Proc. European Signal Processing Conf.* 2014, pp. 934–938.
- [21] P. Mowlae, M. G. Christensen, and S. H. Jensen. “New Results on Single-Channel Speech Separation Using Sinusoidal Modeling”. In: *IEEE Trans. Audio, Speech, Language Process.* 19(5) (2011), pp. 1265–1277.
- [22] K. Paliwal and A. Basu. “A speech enhancement method based on Kalman filtering”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 12. 1987, pp. 177–180. DOI: 10.1109/ICASSP.1987.1169756.
- [23] S. Karimian-Azari, J. Benesty, J. R. Jensen and M. G. Christensen. “A Broadband Beamformer Using Controllable Constraints and Minimum Variance”. In: *Proc. European Signal Processing Conf.* 2014, pp. 666–670.
- [24] S. M. Nørholm, J. R. Jensen, and M. G. Christensen. “Enhancement and Noise Statistics Estimation for Non-Stationary Voiced Speech”. In: *IEEE Trans. Audio, Speech, Language Process.* 24(4) (2016), pp. 645–658.
- [25] S. Srinivasan, J. Samuelsson, and W. B. Kleijn. “Codebook-Based Bayesian Speech Enhancement for Nonstationary Environments”. In: *IEEE Trans. Audio, Speech, Language Process.* 15.2 (2007), pp. 441–452. ISSN: 1558-7916. DOI: 10.1109/TASL.2006.881696.
- [26] V. M. Tavakoli, J. R. Jensen, M. G. Christensen, and J. Benesty. “A Framework for Speech Enhancement with Ad Hoc Microphone Arrays”. In: *IEEE Trans. Audio, Speech, Language Process.* 24(6) (2016), pp. 1038–1051.
- #### IV. TDOA, DOA, AND SOURCE LOCALISATION
- [1] P. Bestagini et al. “TDOA-based acoustic source localization in the space–range reference frame”. In: *Multi-dimensional Systems and Signal Process.* 25.2 (2014), pp. 337–359. ISSN: 1573-0824. DOI: 10.1007/s11045-013-0233-8. URL: <https://doi.org/10.1007/s11045-013-0233-8>.
- [2] S. T. Birchfield and R. Gangishetty. “Acoustic localization by interaural level difference”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 4. 2005, pp. 1109–1112. DOI: 10.1109/ICASSP.2005.1416207.
- [3] M. S. Brandstein. “On the use of explicit speech modeling in microphone array applications”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 6. 1998, pp. 3613–3616.
- [4] M. S. Brandstein and H. F. Silverman. “A robust method for speech signal time-delay estimation in reverberant rooms”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 1. 1997, pp. 375–378. DOI: 10.1109/ICASSP.1997.599651.
- [5] K. C. Ho and M. Sun. “Passive Source Localization Using Time Differences of Arrival and Gain Ratios of Arrival”. In: *IEEE Trans. Signal Process.* 56.2 (2008), pp. 464–477. ISSN: 1053-587X. DOI: 10.1109/TSP.2007.906728.
- [6] J. R. Jensen, J. K. Nielsen, M. G. Christensen and S. H. Jensen. “On Frequency Domain Models for TDOA Estimation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2015, pp. 11–15.
- [7] J. R. Jensen, J. K. Nielsen, R. Heusdens, and M. G. Christensen. “DOA Estimation of Audio Sources in Reverberant Environments”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2016, pp. 176–80.
- [8] J. R. Jensen, M. G. Christensen, and S. H. Jensen. “Joint DOA and Fundamental Frequency Estimation Methods based on 2-D Filtering”. In: *Proc. European Signal Processing Conf.* 2010.
- [9] J. R. Jensen, M. G. Christensen, and S. H. Jensen. “Non-linear Least Squares Methods for Joint DOA and Pitch Estimation”. In: *IEEE Trans. Audio, Speech, Language Process.* 21(5) (2013), pp. 923–933.
- [10] J. R. Jensen, M. G. Christensen, J. Benesty and S. H. Jensen. “Joint Spatio-Temporal Filtering Methods for DOA and Fundamental Frequency Estimation”. In: *IEEE Trans. Audio, Speech, Language Process.* 23(1) (2015), pp. 174–185.
- [11] J. X. Zhang, M. G. Christensen, S. H. Jensen, and M. Moonen. “Joint DOA and Multi-Pitch Estimation based on Subspace Techniques”. In: *EURASIP J. on Advances in Signal Process.* 2012(1) (2012), pp. 1–11.
- [12] J. R. Jensen and M. G. Christensen. “DOA and Pitch Estimation of Audio Sources using IAA-based Filtering”. In: *Proc. European Signal Processing Conf.* 2014, pp. 900–904.
- [13] J. R. Jensen and M. G. Christensen. “Near-field Localization of Audio: A Maximum Likelihood Approach”. In: *Proc. European Signal Processing Conf.* 2014, pp. 895–899.
- [14] J. R. Jensen, M. G. Christensen, and S. H. Jensen. “Statistically Efficient Methods for Pitch and DOA Estimation”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2013, pp. 3900–3904.
- [15] S. Karimian-Azari, J. R. Jensen, and M. G. Christensen. “Fast Joint DOA and Pitch Estimation Using a Broadband MVDR Beamformer”. In: *Proc. European Signal Processing Conf.* 2013, pp. 1–5.
- [16] S. Karimian-Azari, J. R. Jensen, and M. G. Christensen. “Fundamental Frequency and Model Order Estimation Using Spatial Filtering”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2014, pp. 5964–5968.
- [17] M. Képesi, L. Ottowitz, and T. Habib. “Joint Position-Pitch Estimation for Multiple Speaker Scenarios”. In: *Proc. Hands-Free Speech Communication and Microphone Arrays.* 2008, pp. 85–88. DOI: 10.1109/HSCMA.2008.4538694.
- [18] C. Knapp and G. Carter. “The generalized correlation method for estimation of time delay”. In: *IEEE Trans. Acoust., Speech, Signal Process.* 24.4 (1976), pp. 320–327. ISSN: 0096-3518.
- [19] M. W. Hansen, J. R. Jensen and M. G. Christensen. “Localizing Near and Far Field Acoustic Sources with Distributed Microphone Arrays”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers.* 2014, pp. 491–495.

- [20] M. W. Hansen, J. R. Jensen and M. G. Christensen. “Pitch and TDOA-based Localization of Acoustics Sources with Distributed Arrays”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2015, pp. 2664–2668.
- [21] L. Y. Ngan et al. “Joint time delay and pitch estimation for speaker localization”. In: *Proc. IEEE Int. Symp. Circuits and Systems*. Vol. 3. 2003, pp. 722–725. DOI: 10.1109/ISCAS.2003.1205121.
- [22] X. Qian and R. Kumaresan. “Joint Estimation of Time Delay and Pitch of Voiced Speech Signals”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers* (1996).
- [23] S. Karimian-Azari, J. R. Jensen, and M. G. Christensen. “Computationally Efficient and Noise Robust DOA and Pitch Estimation”. In: *IEEE Trans. Audio, Speech, Language Process.* 24(9) (2016), pp. 1613–1625.
- [24] S. Karimian-Azari, J. R. Jensen and M. G. Christensen. “Robust DOA Estimation of Harmonic Signals Using Constrained Filters on Phase Estimates”. In: *Proc. European Signal Processing Conf.* 2014, pp. 1930–1934.
- [25] X. Sheng and Y.-H. Hu. “Maximum likelihood multiple-source localization using acoustic energy measurements with wireless sensor networks”. In: *IEEE Trans. Signal Process.* 53.1 (2005), pp. 44–53. ISSN: 1053-587X. DOI: 10.1109/TSP.2004.838930.
- [26] M. Wohlmayr and M. Képesi. “Joint Position-Pitch Extraction from Multichannel Audio”. In: *Proc. Interspeech.* 2007, pp. 1629–1632.
- [27] Y. Wu et al. “Joint Pitch and DOA Estimation Using the ESPRIT Method”. In: *IEEE/ACM Trans. Audio, Speech, Lang. Process.* 23.1 (2015), pp. 32–45. ISSN: 2329-9290. DOI: 10.1109/TASLP.2014.2367817.
- [28] Z. Zhou, M. G. Christensen, and H. C. So. “Two Stage DOA and Fundamental Frequency Estimation Based on Subspace Techniques”. In: *Proc. IEEE Int. Conf. Signal Processing.* 2012, pp. 210–213.
- [29] Z. Zhou et al. “Joint DOA and fundamental frequency estimation based on relaxed iterative adaptive approach and optimal filtering”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2013, pp. 6812–6816. DOI: 10.1109/ICASSP.2013.6638981.
- [4] M. G. Christensen. “Metrics for Vector Quantization-based Parametric Speech Enhancement and Separation”. In: *J. Acoust. Soc. Am.* 133(5) (2013), pp. 3062–3071.
- [5] D. Giacobello, M. G. Christensen, J. Dahl, S. H. Jensen, and M. Moonen. “Sparse Linear Predictors for Speech Processing”. In: *Proc. Interspeech.* 2008.
- [6] D. Giacobello, M. G. Christensen, M. N. Murthi, S. H. Jensen, and M. Moonen. “Sparse Linear Prediction and Its Applications to Speech Processing”. In: *IEEE Trans. Audio, Speech, Language Process.* 20(5) (2012), pp. 1644–1657.
- [7] D. Giacobello, T. van Waterschoot, M. G. Christensen, S. H. Jensen, and M. Moonen. “High-Order Sparse Linear Predictors for Audio Processing”. In: *Proc. European Signal Processing Conf.* 2010.
- [8] D. Giacobello et al. “Stable 1-norm error minimization based linear predictors for speech modeling”. In: *IEEE Trans. Audio, Speech, Language Process.* 22(5) (2014), pp. 912–922.
- [9] P. Hedelin. “A Sinusoidal LPC Vocoder”. In: *IEEE Workshop on Speech Coding.* 2000, 2–4.
- [10] P. Hedelin. “A tone oriented voice excited vocoder”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 1981, pp. 205–208.
- [11] R. Heusdens et al. “Bit-Rate Scalable Intraframe Sinusoidal Audio Coding Based on Rate-Distortion Optimization”. In: *J. Audio Eng. Soc.* (Mar. 2006), pp. 167–188.
- [12] P. Korten, J. Jensen, and R. Heusdens. “High-Resolution Spherical Quantization of Sinusoidal Parameters”. In: *IEEE Trans. Audio, Speech, Language Process.* 15(3) (2007), pp. 966–981.
- [13] J. Lindblom. “A Sinusoidal Voice Over Packet Coder Tailored for the Frame-Erasure Channel”. In: (2004).
- [14] J. Lindblom. “Coding Speech for Packet Networks”. PhD thesis. Chalmers University of Technology, 2003.
- [15] M. G. Christensen. “Estimation and Modeling Problems in Parametric Audio Coding”. Award: Spar Nord Foundation’s Research Prize. PhD thesis. Aalborg University, July 2005. ISBN: 87-90834-80-1.
- [16] M. G. Christensen. “On Perceptual Distortion Measures and Parametric Modeling”. In: *In Proc. Acoustics’08 Paris.* 2008.
- [17] M. H. Larsen, M. G. Christensen and S. H. Jensen. “Variable Dimension Trellis-Coded Quantization of Sinusoidal Parameters”. In: *IEEE Signal Process. Lett.* 15 (2008), pp. 17–20.
- [18] R. J. McAulay and T. F. Quatieri. “Sinusoidal Coding”. In: *Speech Coding and Synthesis*. Ed. by W. B. Kleijn and K. K. Paliwal. Elsevier Science B.V., 1995. Chap. 4.
- [19] K. K. Paliwal and B. S. Atal. “Efficient Vector Quantization of LPC Parameters at 24 Bits/Frame”. In: *IEEE Trans. Speech Audio Process.* 1 (1993), pp. 3–14.
- [20] H. Purnhagen and N. Meine. “HILN - The MPEG-4 Parametric Audio Coding Tools”. In: *IEEE International Symposium on Circuits and Systems.* 2000.
- [21] T. L. Jensen, D. Giacobello, T. van Waterschoot, and M. G. Christensen. “Fast Algorithms for High-Order

## V. SPEECH AND AUDIO CODING

- [1] L. Almeida and J. Tribolet. “Harmonic coding: A low bit-rate, good-quality speech coding technique”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 7. 1982, pp. 1664–1667.
- [2] L. B. Almeida and F. M. Silva. “Variable-Frequency Synthesis: An Improved Harmonic Coding Scheme”. In: *IEEE Proc. Int. Conf. Acoust., Speech, Signal Processing.* Dec. 1984, 27.5.1.
- [3] B. S. Atal and J. R. Remde. “A New Model of LPC Excitation for Producing Natural Sounding Speech at Low Bit Rates”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 1982.

Sparse Linear Prediction with Applications to Speech Processing”. In: *Speech Communication* 76 (Feb. 2016), pp. 143–156.

- [22] K. Vos et al. “High-Quality Consistent Analysis-Synthesis in Sinusoidal Coding”. In: *Proc. Audio Eng. Soc. 17th Conf: High Quality Audio Coding*. 1999, pp. 244–250.

## VI. MODEL COMPARISON

- [1] P. M. Djuric. “Asymptotic MAP Criteria for Model Selection”. In: *IEEE Trans. Signal Process.* 46 (Oct. 1998), pp. 2726–2735.
- [2] E. J. Hannan. “Developments in Time Series Analysis”. In: Chapman and Hall, 1993. Chap. Determining the number of jumps in a spectrum, pp. 127–138.
- [3] L. Kavalieris and E. J. Hannan. “Determining the number of terms in a trigonometric regression”. In: *J. on Time Series Analysis* 15(6) (1994), pp. 613–625.
- [4] M. G. Christensen, A. Jakobsson, and S. H. Jensen. “Sinusoidal Order Estimation using Angles between Subspaces”. In: *EURASIP J. on Advances in Signal Process.* (2009). Article ID 948756, pp. 1–11.
- [5] M. G. Christensen, A. Jakobsson and S. H. Jensen. “Sinusoidal Order Estimation using the Subspace Orthogonality and Shift-Invariance Properties”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers*. 2007, pp. 651–655.
- [6] M. G. Christensen and S. H. Jensen. “Variable Order Harmonic Sinusoidal Parameter Estimation for Speech and Audio Signals”. In: *Rec. Asilomar Conf. Signals, Systems, and Computers*. 2006, pp. 1126–1130.
- [7] J. K. Nielsen, M. G. Christensen, and S. H. Jensen. “Bayesian Model Comparison and the BIC for Regression Models”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2013, pp. 6362–6366.
- [8] J. K. Nielsen, M. G. Christensen, and S. H. Jensen. “Model Selection and Comparison for Independent Sinusoids”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2014, pp. 1891–1895.
- [9] J. K. Nielsen et al. “Bayesian Model Comparison with the g-Prior”. In: *IEEE Trans. Signal Process.* 62(1) (2014), pp. 225–238.
- [10] B. G. Quinn. “Estimating the number of terms in a sinusoidal regression”. In: *J. on Time Series Analysis* 10(1) (1989), pp. 71–75.
- [11] P. Stoica and Y. Selen. “Model-order selection: a review of information criterion rules”. In: *IEEE Signal Process. Mag.* 21(4) (July 2004), pp. 36–47.

## VII. SPEECH AND AUDIO MODELING

- [1] L. B. Almeida and J. M. Tribolet. “A Model for Short-Time Phase Prediction of Speech”. In: *Proc. Int. Conf. Acoust., Speech, Signal Processing*. 1981, pp. 213–216.
- [2] R. Boyer and K. Abed-Meraim. “Audio Modeling Based on Delayed Sinusoids”. In: *IEEE Trans. Speech Audio Process.* 12(2) (Mar. 2004), pp. 110–120.

- [3] D. Clark et al. “Multi-Object Tracking of Sinusoidal Components in Audio with the Gaussian Mixture Probability Hypothesis Density Filter”. In: *Proc. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics*. 2007, pp. 339–342. DOI: 10.1109/ASPAA.2007.4393009.
- [4] B. David and R. Badeau. “Fast Sequential LS Estimation for Sinusoidal Modeling and Decomposition of Audio Signals”. In: *Proc. IEEE Workshop on Appl. of Signal Process. to Aud. and Acoust.* 2007, pp. 211–214.
- [5] A. El-Jaroudi and J. Makhoul. “Discrete All-Pole Modeling”. In: *IEEE Trans. Signal Process.* 39 (1991), pp. 411–423.
- [6] E. B. George and M. J. T. Smith. “Analysis-by-synthesis/overlap-add sinusoidal modeling applied to the analysis-synthesis of musical tones”. In: *J. Audio Eng. Soc.* 40(6) (1992), pp. 497–516.
- [7] E. B. George and M. J. T. Smith. “Speech analysis/synthesis and modification using an analysis-by-synthesis/overlap-add sinusoidal model”. In: *IEEE Trans. Speech Audio Process.* 5(5) (Sept. 1997), pp. 389–406.
- [8] S. Godsill and M. Davy. “Bayesian Computational Models for Inharmonicity in Musical Instruments”. In: *Proc. IEEE Workshop on Appl. of Signal Process. to Aud. and Acoust.* 2005, pp. 283–286.
- [9] S. Godsill and M. Davy. “Bayesian harmonic models for musical pitch estimation and analysis”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2002.
- [10] M. M. Goodwin. “Adaptive Signal Models: Theory, Algorithms, and Audio Applications”. PhD thesis. University of California, Berkeley, 1997.
- [11] M. M. Goodwin. “Residual Modeling in Music Analysis-Synthesis”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* Vol. 2. 1996, pp. 1005–1008.
- [12] R. Gribonval and E. Bacry. “Harmonic Decomposition of Audio Signals with Matching Pursuit”. In: *IEEE Trans. Signal Process.* Vol. 51(1). Jan. 2003.
- [13] R. Heusdens, R. Vafin, and W. B. Kleijn. “Sinusoidal Modeling using Psychoacoustic-adaptive matching pursuits”. In: *IEEE Signal Process. Lett.* 9(8) (Aug. 2002), pp. 262–265.
- [14] G. Li, L. Qiu, and L. K. Ng. “Signal Representation Based on Instantaneous Amplitude Models with Application to Speech Synthesis”. In: *IEEE Trans. Speech Audio Process.* 8(3) (2000), pp. 353–357.
- [15] P. Maragos, J. F. Kaiser, and T. F. Quatieri. “Energy Separation in Signal Modulations with Application to Speech Analysis”. In: *IEEE Trans. Signal Process.* 41(10) (Oct. 1993), pp. 3024–3051.
- [16] R. J. McAulay and T. F. Quatieri. “Speech Analysis/Synthesis Based on a Sinusoidal Representation”. In: *IEEE Trans. Acoust., Speech, Signal Process.* 34(4) (Aug. 1986), pp. 744–754.
- [17] R. J. McAulay and T. F. Quatieri. “Speech Transformation Based on a Sinusoidal Representation”. In: *IEEE Trans. Acoust., Speech, Signal Process.* 34 (Dec. 1986), pp. 1449–1464.

- [18] J. Nieuwenhuijse, R. Heusdens, and E. F. Deprettere. "Robust Exponential Modeling of Audio Signals". In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 1998, pp. 3581–3584.
- [19] M. R. Portnoff. "Time-frequency representation of digital signals and systems based on short-time Fourier analysis". In: *IEEE Trans. Acoust., Speech, Signal Process.* 28 (Feb. 1980), pp. 55–69.
- [20] M. R. Portnoff. "Time-Scale Modification of Speech Based on Short-Time Fourier Analysis". In: *IEEE Trans. Acoust., Speech, Signal Process.* 29 (June 1981), pp. 374–390.
- [21] P. Prandoni. "Optimal Segmentation Techniques for Piecewise Stationary Signals". PhD thesis. Ecole Polytechnique Federale de Lausanne, 1999.
- [22] P. Prandoni, M. M. Goodwin, and M. Vetterli. "Optimal time segmentation for signal modeling and compression". In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 1997, pp. 2029–2032.
- [23] P. Prandoni and M. Vetterli. "R/D optimal linear prediction". In: *IEEE Trans. Speech Audio Process.* (2000), pp. 646–655.
- [24] C. A. Rødbro and S. H. Jensen. "Time-scaling of Sinusoids for Intelligent Jitter Buffer in Packet Based Telephony". In: *Proc. IEEE Workshop on Speech Coding for Telecommunications.* 2002, pp. 71–73.
- [25] B. Santhanam and P. Maragos. "Demodulation of Discrete Multicomponent AM-FM Signals using Periodic Algebraic Separation and Energy Demodulation". In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 1997.
- [8] K. Kim and G. Shevlyakov. "Why Gaussianity?" In: *IEEE Signal Process. Mag.* 25.2 (2008), pp. 102–113. DOI: 10.1109/MSP.2007.913700.
- [9] J. Li and P. Stoica. "Efficient Mixed-Spectrum Estimation with Application to Target Feature EXtraction". In: *IEEE Trans. Signal Process.* 44(2) (Feb. 1996), pp. 281–295.
- [10] J. Makhoul. "Linear Prediction: A Tutorial Review". In: *Proc. IEEE* 63(4) (Apr. 1975), pp. 561–580.
- [11] S. L. Marple. "Computing the discrete-time "analytic" signal via FFT". In: *IEEE Trans. Signal Process.* 47 (Sept. 1999), pp. 2600–2603.
- [12] S. O. Rice. "Mathematical Analysis of Random Noise". In: *The Bell Systems Technical Journal* 3 (1944), 282–332.
- [13] R. Roy and T. Kailath. "ESPRIT - Estimation of Signal Parameters via Rotational Invariance Techniques". In: *IEEE Trans. Acoust., Speech, Signal Process.* 22 (1989), pp. 353–362.
- [14] T. Shu and X. Liu. "Robust and Computationally Efficient Signal-Dependent Method for Joint DOA and Frequency Estimation". In: *EURASIP J. on Advances in Signal Processing* 2008 (2008), 16 pages.
- [15] P. Stoica, A. Jakobsson, and J. Li. "Cisoid Parameter Estimation in the Colored Noise Case: Asymptotic Cramér-Rao Bound, Maximum Likelihood and Nonlinear Least-Squares". In: *IEEE Trans. Signal Process.* 45 (1997), pp. 2048–2059.
- [16] P. Stoica, H. Li, and J. Li. "Amplitude Estimation of Sinusoidal Signals: Survey, New Results and an Application". In: *IEEE Trans. Signal Process.* 48(2) (Feb. 2000), pp. 338–352.
- [17] P. Stoica and A. Nehorai. "MUSIC, Maximum Likelihood, and Cramer-Rao Bound". In: *IEEE Trans. Acoust., Speech, Signal Process.* 37(5) (May 1989), pp. 720–741.
- [18] P. Stoica and A. Nehorai. "MUSIC, Maximum Likelihood, and Cramer-Rao Bound; further results and comparisons". In: *IEEE Trans. Acoust., Speech, Signal Process.* 38(12) (Dec. 1990), pp. 2140–2150.
- [19] H. L. Van Trees. *Optimum Array Processing: Part IV of Detection, Estimation, and Modulation Theory.* John Wiley & Sons, Inc., 2002.
- [20] A. J. van der Veen, M. Vanderveen, and A. Paulraj. "Joint angle and delay estimation using shift invariance techniques". In: *IEEE Trans. Signal Process.* 46(2) (1998), pp. 405–418.
- [21] H. Wang and M. Kaveh. "Coherent signal-subspace processing for the detection and estimation of angles of arrival of multiple wide-band sources". In: *IEEE Trans. Acoust., Speech, Signal Process.* 33.4 (1985), pp. 823–831. ISSN: 0096-3518.
- [22] M.-Y. Zou, C. Zhenming, and R. Unbehauen. "Separation of Periodic Signals by using an algebraic method". In: *Proc. IEEE Int. Symp. Circuits and Systems.* Vol. 5. 1991, pp. 2427–2430.

## VIII. ESTIMATION THEORY

- [1] G. Bienvenu. "Influence of the spatial coherence of the background noise on high resolution passive methods". In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 1979, pp. 306–309.
- [2] J. Capon. "High-resolution frequency-wavenumber spectrum analysis". In: *Proc. IEEE* 57(8) (1969), pp. 1408–1418.
- [3] M. Feder and E. Weinstein. "Parameter Estimation of Superimposed Signals using the EM Algorithm". In: *IEEE Trans. Acoust., Speech, Signal Process.* 36(4) (Apr. 1988), pp. 477–489.
- [4] O. L. Frost III. "An algorithm for linearly constrained adaptive array processing". In: *Proc. IEEE* 60(8) (1972), pp. 926–935. ISSN: 0018-9219.
- [5] R. M. Gray. "Toeplitz and Circulant Matrices: A review". In: *Foundations and Trends in Communications and Information Theory* 2(3) (2006), pp. 155–239.
- [6] E. J. Hannan and B. Wahlberg. "Convergence Rates for Inverse Toeplitz Matrix Forms". In: *J. Multivariate Analysis* 31 (1989), pp. 127–135.
- [7] A. Jakobsson. "Model-Based and Matched-Filterbank Signal Analysis". PhD thesis. Uppsala University, Feb. 2000.

## IX. NOISE TRACKING AND ESTIMATION

- [1] I. Cohen. “Noise spectrum estimation in adverse environments: Improved minima controlled recursive averaging”. In: *IEEE Trans. Audio, Speech, Language Process.* 11(5) (2003), pp. 466–475.
- [2] D. Ealey, H. Kelleher, and D. Pearce. “Harmonic tunnelling: tracking non-stationary noises during speech”. In: *EuroSpeech*. 2001, pp. 437–440.
- [3] T. Gerkmann and R. C. Hendriks. “Unbiased MMSE-Based Noise Power Estimation with Low Complexity and Low Tracking Delay”. In: *IEEE Trans. Audio, Speech, Language Process.* 20(4) (2012), pp. 1383–1393.
- [4] R. C. Hendriks and T. Gerkmann. “Noise correlation matrix estimation for multi-microphone speech enhancement”. In: 20.1 (2012), pp. 223–233.
- [5] M. S. Kavalekalam et al. “A study of noise PSD estimators for single Channel Speech Enhancement”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2018.
- [6] R. Martin. “Noise power spectral density estimation based on optimal smoothing and minimum statistics”. In: *IEEE Trans. Audio, Speech, Language Process.* 9.5 (2001), pp. 504–512.
- [7] J. K. Nielsen et al. “Model-based Noise PSD Estimation from Speech in Non-stationary Noise”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2018.
- [8] J. Taghia et al. “An evaluation of noise power spectral density estimation algorithms in adverse acoustic environments”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* IEEE. 2011, pp. 4640–4643.
- [7] B. G. Quinn and J. M. Fernandes. “A Fast Efficient Technique for the Estimation of Frequency”. In: *Biometrika* 78(3) (Sept. 1991), pp. 489–497.
- [8] B. G. Quinn and E. J. Hannan. *The Estimation and Tracking of Frequency*. Cambridge Series in Statistical and Probabilistic Mathematics. Cambridge University Press, 2001.
- [9] B. G. Quinn and P. J. Thomson. “Estimating the frequency of a periodic function”. In: *Biometrika* 78(1) (1991), pp. 65–74.
- [10] S. Tretter. “Estimating the frequency of a noisy sinusoid by linear regression (Corresp.)” In: *IEEE Trans. Inf. Theory* 31.6 (1985), pp. 832–835. ISSN: 0018-9448. DOI: 10.1109/TIT.1985.1057115.
- [11] Z. Zhou, H. C. So, and M. G. Christensen. “Parametric Modeling for Damped Sinusoids from Multiple Channels”. In: *IEEE Trans. Signal Process.* 61(15) (2013), pp. 3895–3907.

## X. SPECTRAL ESTIMATION AND FREQUENCY ESTIMATION

- [1] D. Huang. “On low and high frequency estimation”. In: *J. of Time Series Analysis* 17(4) (1996), pp. 351–365.
- [2] J. H. Jensen, M. G. Christensen, and S. H. Jensen. “An Amplitude and Covariance Matrix Estimator for Signals in Colored Gaussian Noise”. In: *Proc. European Signal Processing Conf.* 2009, pp. 2485–2488.
- [3] J. K. Nielsen, P. Smaragdis, M. G. Christensen, and S. H. Jensen. “An Amplitude Spectral Capon Estimator with a Variable Filter Length”. In: *Proc. European Signal Processing Conf.* 2012, pp. 430–434.
- [4] J. K. Nielsen, T. L. Jensen, J. R. Jensen, M. G. Christensen, and S. H. Jensen. “Grid Size Selection for Nonlinear Least-Squares Optimization in Spectral Estimation and Array Processing”. In: *Proc. European Signal Processing Conf.* 2016.
- [5] J. X. Zhang, M. G. Christensen, J. Dahl, S. H. Jensen, and M. Moonen. “Frequency-Domain Parameter Estimations for Binary Masked Signals”. In: *Proc. Interspeech*. 2008.
- [6] L. Shi, J. R. Jensen, and M. G. Christensen. “Least 1-Norm Pole-Zero Modeling with Sparse Deconvolution for Speech Analysis.” In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2017.

## XI. ADAPTIVE FEEDBACK CANCELLATION

- [1] K. Ngo, T. van Waterschoot, M. G. Christensen, M. Moonen, S. H. Jensen, and J. Wouters. “Adaptive Feedback Cancellation in Hearing Aids using a Sinusoidal Near-End Model”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2010, pp. 181–184.
- [2] K. Ngo, T. van Waterschoot, M. G. Christensen, M. Moonen, S. H. Jensen, J. Wouters. “Prediction-Error-Method-based Adaptive Feedback Cancellation in Hearing Aids using Pitch Estimation”. In: *Proc. European Signal Processing Conf.* 2010.
- [3] K. Ngo et al. “Improved Prediction Error Filters for Adaptive Feedback Cancellation in Hearing Aids”. In: *Signal Processing* 91(11) (2013), pp. 3062–3075.

## XII. PACKET-LOSS CONCEALMENT

- [1] J. K. Nielsen, M. G. Christensen, A. T. Cemgil, S. J. Godsill, and S. H. Jensen. “Bayesian Interpolation and Parameter Estimation in a Dynamic Sinusoidal Model”. In: *IEEE Trans. Audio, Speech, Language Process.* 19(7) (2011), pp. 1986–1998.
- [2] J. K. Nielsen, M. G. Christensen, A. T. Cemgil, S. J. Godsill, and S. H. Jensen. “Bayesian Interpolation in a Dynamic Sinusoidal Model with Application to Packet-loss Concealment”. In: *Proc. European Signal Processing Conf.* 2010.

## XIII. SPEECH INTELLIGIBILITY

- [1] C. Sørensen, A. Xenaki, J. B. Boldt, and M. G. Christensen. “Pitch-Based Non-Intrusive Intelligibility Prediction”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2017.
- [2] F. Chen, O. Hazrati, and P. C. Loizou. “Predicting the intelligibility of reverberant speech for cochlear implant listeners with a non-intrusive intelligibility measure”. In: *Biomedical Signal Processing and Control* 8.3 (2013), pp. 311–314. ISSN: 1746-8094.



- [3] T. H. Falk, C. Zheng, and W. Y. Chan. “A Non-Intrusive Quality and Intelligibility Measure of Reverberant and Dereverberated Speech”. In: *IEEE Trans. Audio, Speech, Language Process.* 18.7 (2010), pp. 1766–1774. ISSN: 1558-7916.
- [4] M. Karbasi, A. H. Abdelaziz, and D. Kolossa. “Twin-HMM-based non-intrusive speech intelligibility prediction”. In: *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.* 2016, pp. 624–628. DOI: 10.1109/ICASSP.2016.7471750.
- [5] C. H. Taal et al. “An Algorithm for Intelligibility Prediction of Time-Frequency Weighted Noisy Speech”. In: *IEEE Trans. Audio, Speech, Language Process.* 19.7 (2011), pp. 2125–2136. ISSN: 1558-7916. DOI: 10.1109/TASL.2011.2114881.

#### XIV. DATABASES

- [1] J. K. Nielsen, J. R. Jensen, S. H. Jensen and M. G. Christensen. “The Single- and Multichannel Audio Recordings Database (SMARD)”. In: *Proc. Int. Workshop on Acoustic Signal Enhancement.* 2014, pp. 40–44.