

A. Hajj-Ahmad, S. Baudry, B. Chupeau, G. Doërr and M. Wu, "Flicker Forensics for Camcorder Piracy," in *IEEE Transactions on Information Forensics and Security*, vol. 12, no. 1, pp. 89-100, Jan. 2017.

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Abstract:

Camcorder piracy refers to the process of using a camcorder to record a screen that displays copyrighted content. In contrast to the previous works that aimed at detecting the occurrence of camcorder piracy, this paper conducts an indepth study of the uminance flicker that is naturally present in camcorded videos due to the interplay between an LCD screen and a camcorder. We first model the flicker signal and show that its parameters are tied to such internal characteristics of the pirate devices as the back-light frequency of the LCD screen and the read-out time of the camcorder. We then describe estimation techniques to recover these hidden parameters directly from camcorded videos and demonstrate that such forensic cues could provide evidences about the pirate devices. We also discuss how to recover the shape of the low-power flicker signal itself and show that it could be used to infer which back-light technology is employed in the pirate LCD screen.