INTRODUCTION
We detect and classify Table Tennis strokes in videos recorded in natural condition. The goal is to develop an intelligent computer environment where teachers and students can analyse their games for improving players performance.

TTSTROKE-21 & SSTCNN
In previous work\cite{1,3}, a new dataset TTStroke-21 focusing on Table Tennis games and a Siamese Spatio-Temporal Convolutional Neural Network so called SSTCNN have been introduced. Spatio-temporal data samples of size (W,H,T) = (120, 120, 100) are classified over 20 stroke classes and a rejection class, using RGB video frames and their estimated motion vectors V=\(v_x, v_y\).

FLOW METHODS
Different Optical flow methods are compared using Sintel Benchmark\cite{21} and TTStroke-21 for different metrics.

FLOW NORMALIZATION
Three normalization methods have been tested. They all take into account the absolute values of the motion vectors computed over the whole dataset. They have been compared using classification accuracy on TTStroke-21.

RESULTS

<table>
<thead>
<tr>
<th>Normalizations</th>
<th>Train</th>
<th>Validation</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max</td>
<td>53.5 / 38.5</td>
<td>44.4 / 36.5</td>
<td>44 / 27.6</td>
</tr>
<tr>
<td>Normal</td>
<td>88.5 / 34</td>
<td>73.5 / 35.7</td>
<td>74.1 / 26.7</td>
</tr>
<tr>
<td>Log</td>
<td>97.8 / 45.3</td>
<td>75.7 / 37</td>
<td>68.1 / 41.4</td>
</tr>
</tbody>
</table>

CONCLUSION
• Better flow estimator did not improve the classification.
• aMSE seems to be a good metric to evaluate the flow estimator for classification.
• The normalization has a strong influence on the classification score.