

## **Analyzing the video data of cell oscillations in microchips: algorithm and preliminary results**

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An algorithm of the video data analysis is proposed, which allows for estimating both the micrometer absolute magnitude of cell contraction and the rate of oscillations in  $\mu\text{m/s}$ . Moreover, it allows for decomposing the mechanical oscillations of cells into components. The algorithm has been used to evaluate the change in the contraction rate of cardiomyocyte cells cultured in a lab-on-chip, as a function of voltage intensity and excitation frequency under different experimental conditions. Examples of changes in the shape of the pulses at different frequencies and in the spatial heterogeneity of the mechanical activity of cells in microchip as a function of the excitation frequency and the voltage intensity are presented.