

## HIGH-RESOLUTION MULTICHANNEL MEASUREMENT AND ANALYSIS OF CARDIAC REPOLARIZATION

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### Abstract:

Time and spatial inhomogeneity of the repolarization phase is considered to be an important, noninvasive indication of sudden cardiac death in patients after myocardial infarction. Analysis of spatial variability of the repolarization phase was carried out on signals recorded with the M-channel system for measurement of high-resolution ECG. The lead position on the torso, according to the University of Amsterdam lead system, was used. A new parameter, called the *T*-wave shape index and the distribution function method, as a method sensitive to shape variations, were applied to examine spatial variability of the *T*-wave shape in HR ECG maps.

A group of 14 healthy volunteers and a group of 12 patients after myocardial infarction were studied.

The diversity of spatial distributions of the parameters connected to the shape of the *T*-wave is clearly noticeable in the group of patients after myocardial infarction. The similarity of spatial distributions of proposed parameters in the group of healthy subjects is observed. The obtained results confirm the hypothesis that the spatial heterogeneity of the repolarization phase increases after myocardial infarction.

**Keywords:** high-resolution ECG, repolarization phase, shape variability, myocardial infarction