

Abstract Submitted  
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**Technique to Measure Action Potential Wave Front Speed, Direction, and Curvature in Cardiac Tissue** NACHAAT MAZEH, Beaumont Health Systems, BRADLEY ROTH, Oakland University — The velocity and curvature of a wave front are important factors in the propagation of electrical activity through cardiac tissue, particularly during heart arrhythmias such as fibrillation. A method is presented that uses the arrival times at a square array of four electrodes to determine the speed, direction, and curvature of the wave front. To test this method, computer simulations are performed using the bidomain representation of the cardiac tissue and the Beeler-Reuter model for the active membrane dynamics. The method is verified for simple fiber geometries, and is then applied to reentry through complicated fiber geometry.

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