

Computer models of endo-epicardial dissociation of electrical activity and transmural conduction during atrial fibrillation

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Ph.D. Thesis Propositions

Computer Models of Endo–Epicardial Dissociation of Electrical Activity and Transmural Conduction During Atrial Fibrillation

1. Loss of endo–epicardial connections and epicardial fibrosis are sufficient to show transmural conduction and increase AF stability (this thesis).
2. Endo–epicardial electrical activity dissociation and breakthroughs contribute significantly to the complexity of simulated AF conduction patterns (this thesis).
3. Truly 3–dimensional atrial models should implement a detailed representation of the endocardial bundle network and its connection to the epicardial layer (this thesis).
4. Persistent AF in patients with structural heart disease is a complex 3–dimensional problem (Maurits Allessie).
5. Simulation is a powerful modeling strategy for understanding complex phenomena (Jeff Rothenberg).
6. A mathematical model is a well–posed system of equations that can describe a real system. (John Stockie)
7. The fact that the model is an approximation does not necessarily detract from its usefulness because models are approximations. All models are wrong, but some are useful (George Box).
8. The challenge in mathematical modelling is “not to produce the most comprehensive descriptive model but to produce the simplest possible model that incorporates the major features of the phenomenon of interest (Howard Emmons).
9. There are no facts, only interpretations (Friedrich Nietzsche).
10. What is important in life is life, and not the result of life (Johann Wolfgang von Goethe).

