

Seminar

Multiscale Modeling of the Heart: an Interdisciplinary Approach to Cardiac Arrhythmia Management and Therapy

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The heart is, undoubtedly, the most important organ in the human body. It is a very complicated electromechanical pump, with an ultra-short time window for correction of any abnormality that may disrupt its regular pump function. Slightest delays in medical intervention lead to sudden cardiac arrest, which is one of the major causes of death in today's world. Thus, understanding how the heart works is a crucial first step in the development of new treatment modalities for heart diseases, such as, cardiac arrhythmias. I use multi-scale computer modeling and experimental methods to study different aspects of cardiac arrhythmias at the cell, tissue and organ level. I involve tools like ion channel engineering and gene therapy to design my system, while applying a nonlinear dynamics-based approach, with high performance computing, to study arrhythmias as spiral and scroll waves of electrical activity in cardiac tissue.

Tuesday, Nov 5th 2019

4:00 PM (Tea/Coffee at 3:30 PM)

Seminar Hall, TIFR-H