

**Linear and Quadratic
Immersed Finite Element Methods
for the Multi-Layer Porous Wall Model
for Coronary Drug-Eluting Stents**

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In this talk, we consider a multi-layer porous wall model for coronary drug-eluting stents that leads to an interface problem whose coefficients have multiple discontinuous points, and an imperfect contact interface jump condition is imposed at the first discontinuous point where the stent meets the artery. The existence and uniqueness of the solution to the related weak problem are established. A linear and a quadratic immersed finite element (IFE) methods are developed for solving this interface problem. Error estimation is carried out to show that the proposed IFE methods converge optimally. Numerical examples are presented to demonstrate features of these IFE methods