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MATHEMATICAL MODEL FOR HUMAN MITRAL VALVE

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Abstract. We apply a mathematical elastic shell model to describe a human mitral valve based on its geometric and mechanical properties. Specifically, we adopt an elliptic variational model called Koiter's equation to simulate the human mitral valve. Then, we provide a conforming finite element method to compute the deformation of the mitral valve. The numerical results show that the proposed mathematical model simulates well the human mitral valve.

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