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Towards patient-specific modeling of mitral valve repair: 3D transesophageal echocardiography-derived parameter estimation

Fan Zhang, Jingjing Kanik, Tommaso Mansi, Ingmar Voigt, Puneet Sharma, Razvan Ioan Ionasec, Lakshman Subrahmanyan, Ben A. Lin, Lissa Sugeng, David Yuh, Dorin Comaniciu, James Duncan

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Highlight

- A semi-automatic framework to build patient-specific models of mitral valve from medical images under user guidance
- Chordae rest length and material parameters are optimized to calibrate patient-specific models to simulate mitral valve closure consistently with observations from TEE images
- First study to our knowledge to estimate material parameters of mitral leaflets on humans from TEE images
- Simulated mitral valve closure from 14 sets of images on 15 patients are compared to the ground truth estimated from TEE images with promising accuracy

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