The Mathematical Laws of Morphology and Biomechanics

Tuesday 25th October 2022 noon EDT

Virtual Presentation: https://purdue.webex.com/meet/aselvite

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Incorporating growth models in Riemannian shape spaces

We review and introduce some Riemannian metrics and evolution equations in the context of diffeomorphic shape analysis. After a short discussion of various approaches at building Riemannian metrics on shape spaces (with a special focus on the foundations of the large deformation diffeomorphic metric mapping algorithm), we introduce elastic metrics and growth models that can be derived from them. In the latter context, a new class of metrics, involving an infinitesimal growth tensor, is considered and some of its properties are studied.