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Barbara Gris - Defining Data-Driven Deformation Models

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Studying shapes through large deformations allows to define a metric on a space of shapes from a metric on a space of deformations. When the set of considered deformations is not relevant to the observed data, the geodesic paths for this metric can be deceiving from a modeling point of view. To overcome this issue, the notion of deformation module allows to incorporate prior coming from the data in the set of considered deformations and the metric. I will present this framework, as well as the IMODAL library which enables to perform registration through such structured deformations. This Python library is modular: adapted priors can be easily defined by the user, several priors can be combined into a global one and various types of data can be considered such as curves, meshes or images.

This is a joint work with Benjamin Charlier, Leander Lacroix and Alain Trouvé.