

## **Momentum Maps, Shape Analysis and Solitons**

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### **Abstract:**

Much of this talk is based on work done with Jerry Marsden (1942 - 2010) on shared geometric properties in the analysis of fluid flow and shape transformations. The talk will discuss uses of geometric mechanics in the problem of registration of images, primarily in the example of planar closed curves. Many types of mathematics apply in this problem, including soliton theory and momentum maps. Some trade secrets will be revealed.