

Institut de Matemàtica

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Vortex and gravitational modeling: a long journey with a rich mathematical history

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Vortex and gravitational dynamics have fascinating and interwoven histories, both for the modeling and for the different areas of mathematics needed to study the corresponding models. Philosophical questions reside behind the modeling part, as for example how do we define gravity beyond our Euclidean perception? Are the laws, we are so familiar with, universal? What is the geometry of our universe?

As for vortices within the boundary of our Solar system we witness fascinating images of vortex dynamics. Recent beautiful observations of polygonal configurations of vortices present in the atmosphere of Jupiter and Saturn, and of polygonal jets in the Earth's atmosphere have revived the interest in the subject.

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