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Title: *"A-posteriori rigorous validation of KAM tori"*

Abstract. In this talk we present a methodology to rigorously validate a given approximation of a quasi-periodic Lagrangia torus of an exact symplectic map. That is, we check the hypothesis of an a-posteriori KAM theorem and we prove the existence of a true invariant torus nearby. Our method is sustained in the a-posteriori KAM formulation developed in the last decade by R. de la Llave and collaborators.

To check the hypotheses of the theorem, we use rigorous fast Fourier transform in combination with a sharp control of the discretization error. An important consequence is that the rigorous computations are performed in a very fast way. Indeed, with the same asymptotic cost of using the parameterization method to obtain numerical approximations of invariant tori.

We will discuss the application of the method to the standard map and the Froeschlé map.