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Gemma Huguet* (`gemma.huguet@upc.edu`), Departament de Matemàtica Aplicada 1, Avda. Diagonal, 647, 08028 Barcelona, Spain, and **Amadeu Delshams**. *Arnold diffusion for non polynomial perturbations of an a-priori unstable Hamiltonian system*.

In [1] Delshams, de la Llave and Seara introduced a geometric mechanism for detecting global instability in a priori unstable Hamiltonian systems. In the same paper, this mechanism was applied to overcome the large gap problem in Arnold diffusion for an a priori unstable Hamiltonian system of 2 and 1/2 degrees of freedom, where the perturbation was assumed to be a trigonometric polynomial in the angle variables.

In this talk, I will show that this mechanism also works for a general case of perturbations whose Fourier series in the angle variables do not need to have a finite number of terms, provided that the perturbation is differentiable enough.

References

- [1] A. Delshams, R. de la Llave, T. M. Seara. A geometric mechanism for diffusion in Hamiltonian systems overcoming the large gap problem: heuristics and rigorous verification on a model. *Memoirs Amer. Math. Soc.*, 844 (2006), 1-161.

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