Abstract

In this talk, we aim to introduce a new method to solve conjugacy problems involving 'small denominators'. Traditional proofs addressing the regularity loss caused by these 'small denominators' have heavily relied on Newtonian / Nash-Moser iterations. We aim to show that the regularity loss can be compensated by composing with appropriate para-differential operators, enabling a proof using only standard fixed-point schemes. This para-differential approach can be applied to study KAM-type problems, avoiding the commonly used 'KAM iterations.' The talk is based on joint works with Thomas Alazard.