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TBA

Mercredi 7 Décembre 2022, 14 :00
IHES, Amphithéâtre Léon Motchane(Cours de l'IHES)
Domaines : math

Titre : *The Loewner Energy at the Crossroad of Random Conformal Geometry and Teichmueller Theory (3/4)*

Orateur : **Yilin Wang (IHES)**

Résumé : *The Loewner energy for Jordan curves first arises from the large deviations of Schramm-Loewner evolution (SLE), a family of random fractal curves modeling interfaces in 2D statistical mechanics. In a certain way, this energy measures the roundness of a Jordan curve, and we show that it is finite if and only if the curve is a Weil-Petersson quasicircle and connect it to determinants of Laplacians. Furthermore, the Loewner energy is a Kahler potential on the Weil-Petersson Teichmueller space identified with the space of Weil-Petersson quasicircles. Intriguingly, this class of finite energy curves has more than 20 equivalent definitions arising in very different contexts, including Teichmueller theory, geometric function theory, hyperbolic geometry, spectral theory, and has been studied since the eighties with motivations from string theory. The myriad of perspectives on this class of curves is both luxurious and mysterious. I will overview the links between Loewner energy and SLE, Weil-Petersson quasicircles, and other branches of mathematics it touches on. I will highlight how ideas from random conformal geometry inspire new results on Weil-Petersson quasicircles and discuss further directions.*