THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

Number Theory Seminar

A spectral theory approach to the Apollonian counting problem

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Abstract

A classic problem in number theory and group theory is to count the number of points in a group orbit satisfying a particular cut-off. In 1982, Lax and Phillips used spectral theory to obtain accurate counts of such orbits in a particular context. In 2009 this method was generalized by Kontorovich to a wider class of counting problems, however this included a restriction on the groups considered. In this talk I will present this spectral approach to counting, how to remove the restriction, and how to generalize these problems. In doing so we will see how to apply these methods to the Apollonian counting problem. This is joint work in progress with Alex Kontorovich.

Date:	February 21, 2022 (Monday)
Time:	9:00 – 10:00pm (Hong Kong Time)
Venue:	ZOOM: https://hku.zoom.us/j/
	Meeting ID: 232 576 6007

All are welcome