**For Favour of Posting**

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# Joint Geometric Analysis Seminar

**(Part of MIST program)**

## *A nonlinear spectrum on closed manifolds*

***Prof. Christos Mantoulidis***
***Rice University***

***Abstract***

The p-widths of a closed Riemannian manifold are a nonlinear analogue of the spectrum of its Laplace-Beltrami operator, which was defined by Gromov in the 1980s and corresponds to areas of a certain min-max sequence of hypersurfaces. By a recent theorem of Liokumovich--Marques-Neves, the p-widths obey a Weyl law, just like the eigenvalues do. However, even though eigenvalues are explicitly computable for many manifolds, there had previously not been any ≥ 2-dimensional manifold for which all the p-widths are known. In recent joint work with Otis Chodosh, we found all p-widths on the round 2-sphere and thus the previously unknown Liokumovich-Marques-Neves Weyl law constant in dimension 2. Our work combines Lusternik-Schnirelmann theory, integrable PDE, and phase transition techniques.

Date: 29 October 2021 (Friday)
Time: 9:00am – 10:00am (Hong Kong time)
ZOOM link: https://cuhk.zoom.us/j/91805734715

*All are Welcome*