MEHDI EDDAOUDI, Laval University
On the gap between consecutive eigenvalues

The main objective of this talk will focus on the universal inequalities of eigenvalues on a riemannian manifold. This subject emerged following the work initiated by Payne, Polya and Weinberger where they studied the question of finding upper bounds on the difference of eigenvalues for euclidean domains under Dirichlet condition. Many works have extended these results in the context of submanifolds. In the particular case of the sphere with a metric in the standard conformal class, we obtain new inequalities involving geometric quantities such as scalar curvature and Cheeger's constant. The method used in this construction is based on Hersch's theorem and some type of Sobolev inequalities.