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## **Weighted Poincaré inequality and structure of complete manifolds**

In this talk, I will discuss some structural and rigidity properties of a class of manifolds satisfying a weighted Poincaré inequality. A weighted Poincaré inequality will be thought of as a generalization of the variational characteristic of the bottom of the spectrum. In this context, this theory can be viewed as a generalization of my previous works with Jiaping Wang.