

## CARLESON MEASURES AND LOGVINENKO-SEREDA SETS ON COMPACT MANIFOLDS

Given a compact Riemannian manifold  $M$ , we consider the space of functions of  $L^2(M)$ , generated by eigenfunctions of eigenvalue less than  $L \geq 1$ , associated to the Laplace-Beltrami operator on  $M$ . We study for which sequence of measures,  $\{\mu_L\}_L$  one has

$$\int_M |f|^2 d\mu_L \approx \int_M |f|^2 dV$$

with constants independent of  $L$  and  $f$ . The inequality  $\lesssim$  gives the Carleson measures and we will present a full characterization of them. The converse inequality will be studied only for the special case  $d\mu_L = \chi_{A_L} dV$ , where  $\{A_L\}_L$  is a sequence of sets in  $M$ . In such case, when the inequality  $\gtrsim$  is verified, we say that this sequence of sets is Logvinenko-Sereda. We will give a characterization of these sets. This is a joint work with Joaquim Ortega-Cerdà.