DISTRIBUTIONAL LIMITS OF RIEMANNIAN MANIFOLDS AND GRAPHS WITH SUBLINEAR GENUS GROWTH

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Studying Gromov-Hausdorff limits of sequences of Riemannian manifolds (M_i) satisfying suitable conditions on their local geometry is an extremely fruitful idea. However, in the most interesting case that the diameter of M_i grows without bounds, one is forced to choose base points $p_i \in M_i$ and consider limits of the pointed spaces (M_i, p_i) in the pointed Gromov-Hausdorff topology. The choice of the base points p_i influences enormously the obtained limits. Benjamini and Schramm introduced the notion of distributional limit of a sequence of graphs; this basically amounts to "choosing the base point by random". In this talk I will describe the distributional limits of sequences (M_i) of manifolds with uniformly pinched curvature and satisfying a certain condition of quasi-conformal nature. I will also explain how these results yield a modest extension of Benjamini's and Schramm's original result. This is joint work with Hossein Namazi and Pekka Pankka.