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Duality of Scales

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Abstract: The Higson Compactification of a metric space was introduced by Higson in studying the Novikov conjecture. The Higson compactification of a proper metric space X is characterized by the property that a continuous function from X to a compact metric space extends to a continuous function on the Higson compactification if and only if that function is slowly oscillating. In this talk, the notion of a function being slowly oscillating will be extended to maps between coarse spaces and uniform spaces. This provides a means to connect the structures of the domain and codomain of the map and to study properties of both spaces. Using slowly oscillating functions, we also create a Galois connection between the set of coarse structures on the domain and the set of uniform structures on the codomain.