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Induced group actions on metric spaces

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Abstract:
I will discuss the following natural extension problem for group actions: Given a group G, a subgroup $H < G$, and an action of H on a metric space S, when is it possible to extend it to an action of the whole group G on a possibly different metric space? When does such an extension preserve interesting properties of the original action of H? I will explain how to formalize this problem and will present a construction of the induced action of G which behaves well when G is hyperbolic relative to H or, more generally, H is hyperbolically embedded in G; in particular, the induced action solves the extension problem in these cases. This talk is based on my work in progress with C. Abbott and D. Hume.