1147-35-303   **Christian Zillinger***, University of Southern California, Department of Mathematics, 3620 S. Vermont Avenue, Los Angeles, CA 90089. *On Geometric and Analytic Mixing Scales.*

In recent years mixing and damping in kinetic equations such as Landau damping in plasma physics and inviscid damping in fluids has been a very active area of research. In order to quantify weak convergence in passive or active scalar problems one commonly uses analytic or geometric mixing scales. While not equivalent, we show that after some modifications both notions are comparable. Here, we further introduce an explicit dyadic model problem. In a second part, we consider decay rates of these scales for Sobolev regular initial data when evolving under transport type dynamics. (Received January 17, 2019)