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Volodymyr Nekrashevych* (nekrash@math.tamu.edu), Department of Mathematics, Texas A&M University, College Station, TX 77843-3368. *Hyperbolic groupoids and their C^* -algebras*. Preliminary report.

We will discuss a notion of a hyperbolic groupoid, which is a generalization of different types of hyperbolic dynamical systems: Gromov hyperbolic groups acting on their boundaries, expanding maps, groupoids associated with Smale spaces and Anosov flows, etc. We will define duality theory for hyperbolic groupoids, and discuss its relation with C^* -algebras. Other properties of C^* -algebras associated with hyperbolic groupoids will be discussed. (Received August 19, 2011)