1062-37-238   **Volodymyr Nekrashevych*** (`nekrash@math.tamu.edu`), Department of Mathematics, Texas A&M University, College Station, TX 77843-3368. *Hyperbolic duality and analysis on fractals.*

We will discuss the notion of hyperbolic pseudogroups and groupoids, the duality theory for them, and applications of the duality for the study of analysis on fractals. Different examples of hyperbolic pseudogroups (coming from holomorphic dynamics, IFS, and Gromov hyperbolic groups) will be described. (Received August 10, 2010)