1118-28-133 **Martina Zähle*** (martina.zaehle@uni-jena.de), 07737 Jena, Germany. *Gaussian space-time fields and (S)PDE on fractals.*

In the first part Gaussian space-time fields on arbitrary Ahlfors regular compact metric measure spaces are considered. If the mean quadratic increments satisfy similar upper estimates like fractional Brownian sheets, optimal Hölder continuity properties are shown. For classes of fractal spaces admitting a Laplace operator (and for more general spaces) formal space-time derivatives of such random fields are introduced. In the spatial component they become rigorous by means of duality arguments in associated fractional Sobolev spaces. For integration with respect to the time argument we use fractional calculus in Banach spaces. In this way one obtains random space-time noises which are applied in the second part to parabolic PDE on such fractals in the pathwise multiplicative sense. (Received January 28, 2016)