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Michael Hinz, Maria Rosaria Lancia, Alexander Teplyaev* (teplyaev@uconn.edu) and
Paola Vernole. *Fractal snowflake domain diffusion with boundary and interior drifts.*

We study a (elliptic measurable coefficients) diffusion in the classical snowflake domain in the situation when there are diffusion and drift terms not only in the interior but also on the fractal boundary, which is a union of three copies of the classical Koch curve. In this example we can combine the fractal membrane analysis, the vector analysis for local Dirichlet forms and quasilinear PDE and SPDE on fractals, non-symmetric Dirichlet forms, and analysis of Lipschitz functions. We show that intrinsic derivatives on the fractal can be defined in a certain point-wise sense, and that an weakly self-similar family globally Lipschitz functions are dense in the Domain of the Dirichlet form. (Received February 01, 2016)