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Haodong Liang* (hdliang@wpi.edu), 100 Institute Road, Mathematical Sciences Dept., Worcester Polytechnic Institute, Worcester, MA 01609. *Quasi-metric Functional Inequalities on the Snowflake Set*. Preliminary report.

We introduce a suitable quasi distance and a measure-valued gradient form (Lagrangian) on the snowflake set and prove scaled Poincaré and capacity inequalities on the quasi-metric balls of the set. It also shows that how the quasi-distance, the invariant Hausdorff measure and the Lagrangian are mutually related on that set. (Received January 20, 2011)