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EXISTENCE OF THE DOMAINS THAT SATISFY THE INTERIOR AND EXTERIOR CORKSCREW CONDITIONS

A. V. Greshnov

We discuss some questions concerning the problems of existence of uniform and NTA domains in complete metric spaces of homogeneous type with intrinsic metric. For such spaces we construct a sufficiently wide class of bounded John domains and prove existence of bounded domains satisfying the interior and exterior corkscrew conditions simultaneously. We find natural conditions on the geometry of complete metric spaces of homogeneous type with intrinsic metric under which the problem of existence of bounded NTA domains is solved in the affirmative.

Key words and phrases: space of homogeneous type, intrinsic metric, shortest arc, Carnot group.

Greshnov Aleksandr Valer'evich
Sobolev Institute of Mathematics,
630090 Novosibirsk, Russia.
E-mail: greshnov@math.nsc.ru

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