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Homogenization of Semi-linear Elliptic and Parabolic Operators in Perforated Domains.

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A second order semi linear elliptic (parabolic) equation whose lower term has power-like growth at infinity with respect to the unknown function is considered. It is proved that a sequence of solutions in the perforated domains (cylinders) converges to a solution in the non-perforated domain (cylinder) as the diameters of the rejected balls (in parabolic metric) converge to zero with a rate depending on the power exponent of the lower term.

Keywords: Homogenization, elliptic and parabolic semi-linear operators, perforated domains.

MSC 2010: 35B37; 35J15; 35J61; 35K10; 35K58

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