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S. J. N. Mosconi

Scuola Normale Superiore, 56126 Pisa, Italy
mosconi@sns.it

P. Tilli

Scuola Normale Superiore, 56126 Pisa, Italy
tilli@sns.it

Γ -Convergence for the Irrigation Problem

We study the asymptotics of the functional $F(\gamma) = \int f(x)d_\gamma(x)^p dx$, where d_γ is the distance function to γ , among all connected compact sets γ of given length, when the prescribed length tends to infinity. After properly scaling, we prove the existence of a Γ -limit in the space of probability measures, thus retrieving information on the asymptotics of minimal sequences.