Numerical assessment of thermal performance and heat storage capacity of thermoactive geostructures

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Abstract

Thermoactive geostructures represent an original technique to fulfil energy demand of buildings and infrastructure. The thermal performance of such structure depends on several parameters as the thermal solicitation, the hy-drogeological context and the thermal characteristics. To improve the design of the thermoactives geostructures, an original approach based on the analysis of thermal flux and volumetric thermal power has been developed. This meth-od permits to assess the temperature variation of a volume and the potential thermal drift of the system. Moreover, this method is used to analyse the ther-mal behaviour of thermoactive diaphragm walls.