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EFFECT OF A DIATHERMAL PARTITION WALL ON NATURAL CONVECTION IN A SPHERICAL POROUS ANNULUS

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ABSTRACT

The present paper reports results of numerical investigation of natural convection in a spherical annulus filled with fluid saturated porous medium. A diathermal wall of infinitesimally thickness is inserted along the arc length in the spherical porous annulus. Due to the diathermal wall, the sub layers are thermally coupled, but the partition is impermeable, which allows imposing different stream flows in the sub layers. The average Nusselt number decreases with insertion of partition. The decrease in value of average Nusselt number depends on the position of diathermal wall.