Convective heat transfer in coarse-grained porous media
A numerical investigation of natural and mixed convection

Chakkingal, M.

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Propositions

accompanying the dissertation

CONVECTIVE HEAT TRANSFER IN COARSE-GRAINED POROUS MEDIA
A NUMERICAL INVESTIGATION OF NATURAL AND MIXED CONVECTION

by

Manu CHAKKINGAL

1. Heat transfer in cavities filled with porous media is comparable to that in fluid-only cavities when thermal plumes thinner than the pore-space (*This Thesis Chapter 2*).

2. Higher thermal conductivity of a porous media packing does not guarantee a higher heat transfer (*This Thesis Chapter 3*).

3. The overall heat transfer in a cavity packed with a coarse grained porous medium depends on the imposed wall temperature *w.r.t* the pore-space (*This Thesis Chapter 4*).

4. General-purpose solvers like OpenFOAM are inefficient for computationally intensive problems *Computers & Fluids* **166**, 1-8 (2018).

5. The concept of borders and CO_2 neutrality does not go hand in hand.

6. A researcher can never be an atheist.

7. Artificial intelligence opens the possibility of a scientific assessment of astrology.

8. Trade is no different from colonization.

9. Neutralizing leaders has worse effect in containing insurgent groups.

10. You cannot decide your working hours in the Netherlands, Buienalarm decides it.

These propositions are regarded as opposable and defendable, and have been approved as such by the promotor prof. dr. ir. C. R. Kleijn and dr. Saša Kenjereš.