Special Issue

Convective Instability in Porous Media

Message from the Guest Editors

Many practical problems involving porous media in engineering, geophysics and CO2 sequestration involve the simulation of what might be termed convection in a very wide sense. Such instabilities are always brought about by nonuniform buoyancy forces due to density changes which, in turn, have arisen because of variations in the temperature and/or chemical composition of the fluid, or by miscible or immiscible displacements of heavier fluids by lighter fluids. The aim of this Special Issue is to collect together a wide variety of papers which have, as their unifying theme, the onset and subsequent development of convective instability. We intend there to be a strong emphasis on the methodology of solution, for reasons of pedagogy, for both analytical and numerical methods. Papers which involve those variants of Darcy's law for which there is no formal support (i.e., REV averaging or experimental validation), will not feature in this issue. Numerical accuracy will be of paramount importance.

Guest Editors

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Editor-in-Chief

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