

Erratum: Grains and gas flow: Molecular dynamics with hydrodynamic interactions
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On p. 4055, the Darcy velocity should have been divided by ϕ and Eq. (3) should be replaced by

$$\frac{\partial \rho_a}{\partial T} + \nabla \cdot \left(\rho_a \left[\mathbf{u} - \frac{\kappa(\rho_s)}{\mu \phi} \nabla P \right] \right) = 0 \quad (1)$$

and correspondingly Eq. (6) [and also Eq. (1) of Ref. [1]] should read

$$\phi \left(\frac{\partial P}{\partial t} + \mathbf{u} \cdot \nabla P \right) = \nabla \cdot \left(P \frac{\kappa}{\mu} \nabla P \right) - P \nabla \cdot \mathbf{u}. \quad (2)$$

These corrections are unlikely to induce any qualitative changes in any published simulations. In regions of constant porosity ϕ_0 the corrections amount to adding a constant factor multiplying the permeability κ , which in turn is equivalent to a change in the hydraulic radius of the particles by a factor $\sqrt{\phi_0}$, i.e., 20% at most. These changes are not likely to change any of the conclusions that have been published.

[1] E. F. Flekkøy, S. McNamara, K. J. Måløy, and D. Gendron, Phys. Rev. Lett. **87**, 134302 (2001); D.-V. Anghel, M. Strauss, E. G. Flekkøy, S. McNamara, and K. J. Måløy, *ibid.* **97**, 059902(E) (2006).