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Buoyancy effects on micro-annulus formation: density unstable
Newtonian-Bingham fluid displacements in vertical channels

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Highlights

- Density unstable displacement of Bingham fluid by a Newtonian fluid
- Many different instabilities observed ($m < 1$ tends to be of Kelvin-Helmholz type; $m > 1$ for inverse bamboo and mushroom)
- Increasing yield stress tends to destabilize
- Find partially static residual layers: static only closest to the wall
- Static wall layers, even for $B_N < 6$, unlike the density stable situation

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