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## Post-breakthrough evolution of viscous fingers

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Viscous fingering instability occurs when a less viscous fluid displaces a more viscous fluid within porous media. It has been extensively studied with pore-scale simulations and bench-scale experiments over the past several decades. Yet the evolution of viscous fingers after the displacement front reaches the outer boundary of the domain is not fully understood (Mora et al., TIPM 2021, Salmo et al., TIPM 2022). Here, we use a combination of microfluidic experiments and pore-network simulations to rationalize the evolution of these patterns under various capillary numbers and viscosity ratios. We discuss our findings in the context of regime crossovers within Lenormand's phase diagram (Lenormand et al., JFM 1988, Primkulov et al., JFM 2021).

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### References

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