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**Details of chaotic advection in pulsed micro-mixing** ARNAUD GOULLET, NADINE AUBRY, New Jersey Institute of Technology — Many microfluidic applications require the mixing of reagents, but efficient mixing in these laminar systems is often difficult. In this presentation, we consider further the method of pulsed flow mixing which takes advantage of time dependency rather than spatial complexity. In particular, using computational fluid dynamics (CFD) we analyze the dynamics of the flow in a channel comprising two inlets and one outlet, with a pulsing of 90 degrees out of phase between the two inlets. By performing extensive numerical simulations and following material lines, the details of the mixing mechanism at the confluence of the inlets are shown.

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