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Analytical Model of Advection and Erosion in a Rectangular Channel MIRON KAUFMAN, Cleveland State University — We consider the Boussinesq pressure driven creeping flow in a rectangular channel. We assume a particle to be made of primary fragments bound together. Particles are advected by the flow and they erode because of the shear stresses imparted by the fluid. The time evolution of the numbers of particles of different sizes is described by the Bateman equations of nuclear radioactivity. We find, by solving these differential equations, the numbers of particles of each possible size as functions of time.

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