Introduction to Stokes' Flow

In the following sections we turn to the subject of flows at very small Reynolds numbers in which the inertial terms in the Navier-Stokes equations (see section (Bhf)) are very small. In doing so it is important to recall the discussion at the end of section (Bhf) in which the uniformity of any assumption regarding the validity of neglecting the inertial terms is discussed. We return to address this issue in a later subsection. In the next section, however, we focus on the equations governing the flow of a viscous, incompressible fluid when the inertial terms are neglected, flows that are known as Stokes flows.