On the existence of strong solutions for a system coupling the Navier-Stokes equation with an elastic plate

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We consider a three-dimensional viscous incompressible fluid governed by the Navier Stokes equation interacting with an elastic plate located on the upper part of the fluid boundary, supplemented with periodic boundary conditions on the lateral boundary and the Navier boundary conditions on the top and the bottom of the boundary. The time variation of the fluid's domain is not known a priori due to the structure displacement. The aim of this work is to study the existence of strong solutions of this fluid-structure model.