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The Effect of Shape Memory on Red Blood Cell Motions XITING NIU, LINGLING SHI, TSORNG-WHAY PAN, ROLAND GLOWINSKI, University of Houston — An elastic spring model is applied to study the effect of the shape memory on the motion of red blood cell in flows. In shear flow, shape memory also plays an important role to obtain all three motions: tumbling, swinging, and tank-treading. In Poiseuille flow, cell has an equilibrium shape as a slipper or parachute depending on capillary number. To ensure the tank-treading motion while in slippery shape, a modified model is proposed by introducing a shape memory coefficient which describes the degree of shape memory in cells. The effect of the coefficient on the cell motion of red blood cell will be presented.

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