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Biviscous blood flow and a new method for velocity profile adjustment CARLOS VELAZQUEZ, ADRIAN REYES, Universidad Nacional Autonoma de Mexico — In this paper we describe our proposal of a new numerical procedure for the adjusting of the velocity profile of body fluids with two viscosities. We have focused on the relevant case of the human blood and we have selected a particular model, the biviscous blood model, with the purpose of proving the convenience of our method. We start by describing the convenience of the biviscous stress equation as a model for the blood constitutive equation, then we solve it in the particular case of a stationary flow and use this solutions as the basis of our numerical procedure, which is described afterwards. Then, we present its implementation for analyzing in vivo measurements and exhibit its pertinence. Finally, we explain the design of a programmatic code of an automatic routine which is capable of applying our method and therefore could be used as the basis of an automatic implementation in new diagnosis software within a measurement device.

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