Abstract Submitted
for the DFD13 Meeting of
The American Physical Society

Platelet transport in microchannels MATHILDE REYSSAT, ANNE LE GOFF, ESPCI/Gulliver, Paris, France, ANTOINE BLIN, PlatOD, JUSTINE PUJOS, ESPCI/Gulliver, Paris, France, AURÉLIE MAGNIEZ, PlatOD, DOMINIQUE BARUCH, INSERM, U765, Paris, France — Blood platelets are small enucleated cells responsible for the arrest of bleeding. These cells have the ability to tether and translocate on injured vascular endothelium, thanks to a specific interaction between a receptor of their membrane and a protein expressed by the cells composing the inner wall of the vessel, the von Willebrand factor (VWF). Others cells have such abilities of rolling. Leucocytes, for example, translocate on surface due to a specific interaction between selectin molecules and their respective glycoprotein ligands. These kinds of cells present two modes of transport: they can either be advected by the flux, or translocate on surfaces due to specific ligand-receptor interactions. Our work consists first in studying experimentally the transport of platelets along a microchannel and then in modeling this particular cell transport. Due to these two modes of transport along a channel, platelets adhering to the surface are not equally distributed along the channel axis. We describe the evolution of the density of platelets with time and distance.

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Date submitted: 27 Jul 2013 Electronic form version 1.4