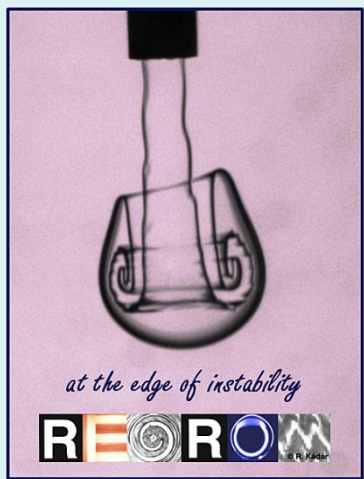
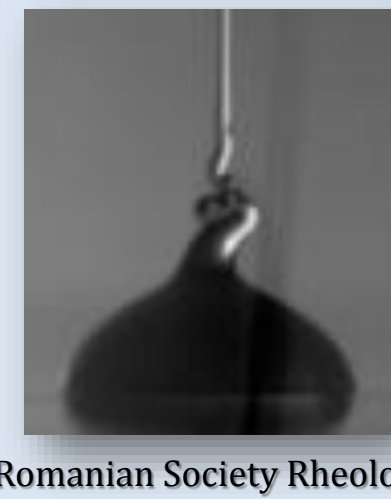




20th Anniversary Meeting of
the European Society of
Rheology

01 April, ETH Zürich 2016

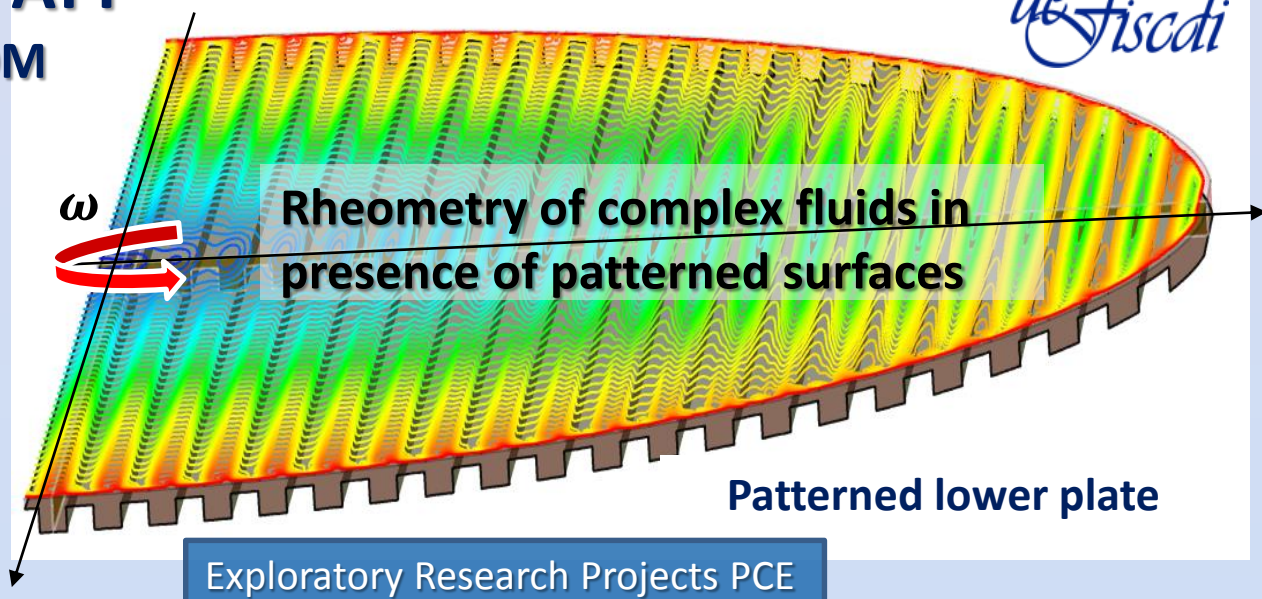
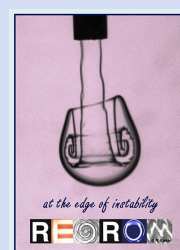


CHARACTERIZATION OF COMPLEX FLOWS IN THE VICINITY OF THE SEPARATION/STAGNATION POINTS

Iulia-Rodica Damian, Stefan Simionescu, Nicoleta-Octavia Tanase, Diana Broboana, Corneliu Balan

REOROM - "Politehnica" University, Bucharest, Romania

RHEO-PATT
By REOROM



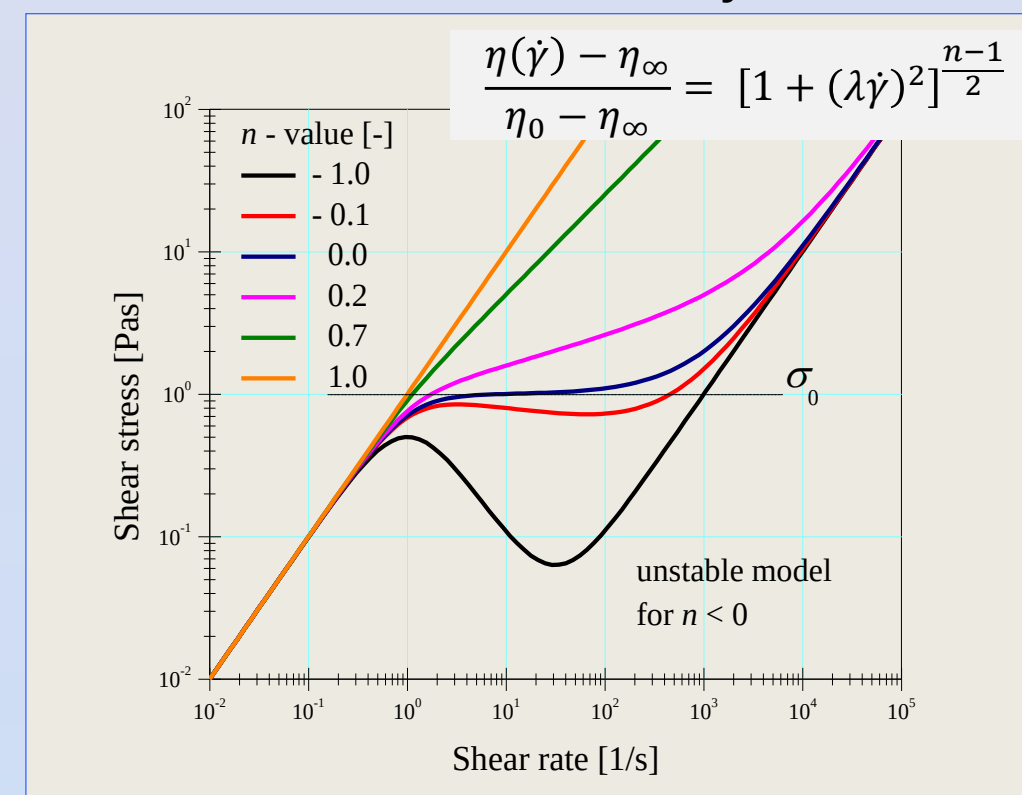
ICR 2012
AERC 2013
AERC 2014

AERC 2015
ICR 2016

COMPUTATIONAL RHEOMETRY
AN USEFUL TOOL TO ANALYSE
THE RHEOLOGICAL MEASUREMENTS

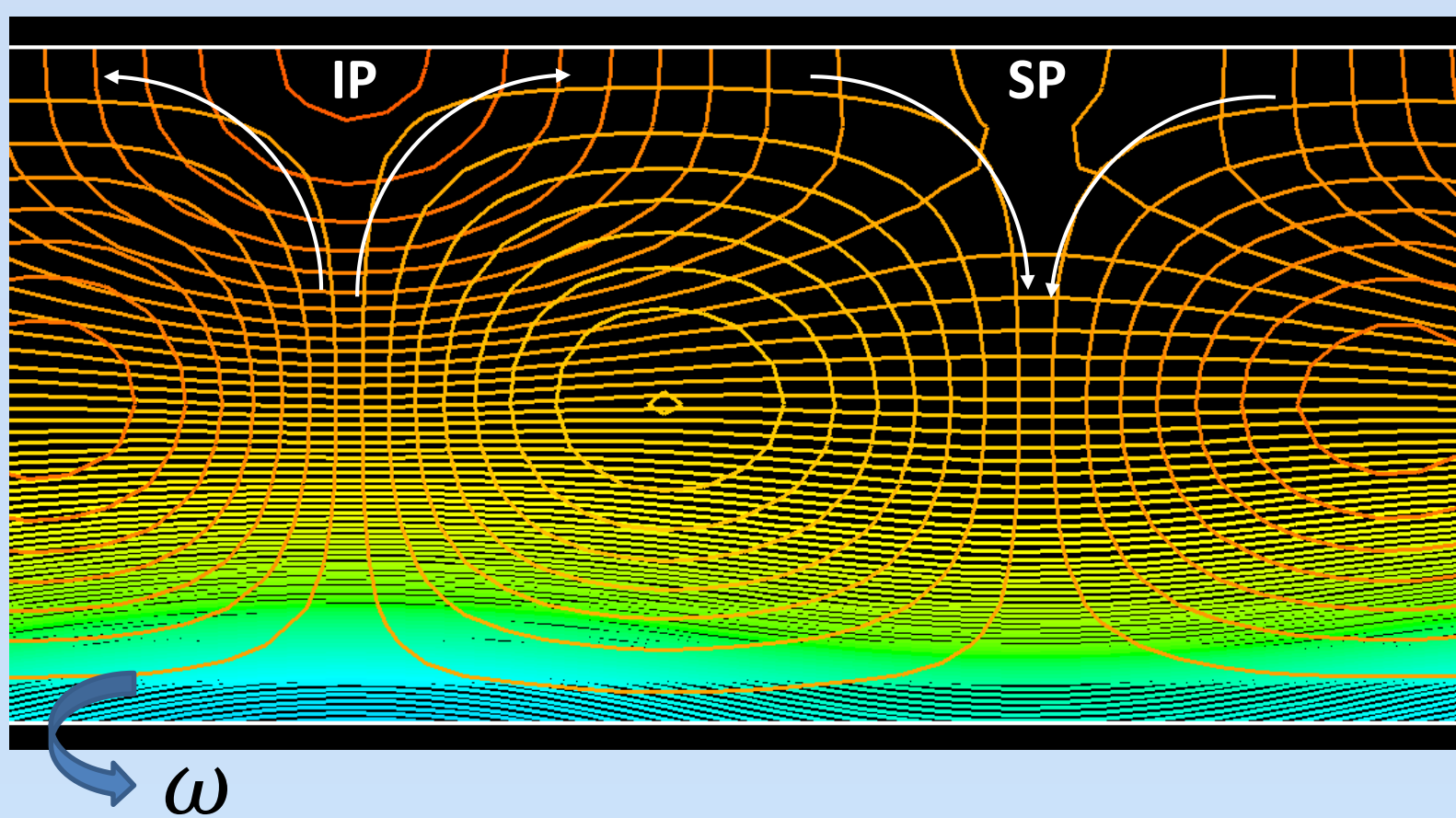
RHEOMETRY IN THE PRESENCE
OF PATTERNED AND
MICROSTRUCTURED SURFACES

Tested Carreau viscosity function

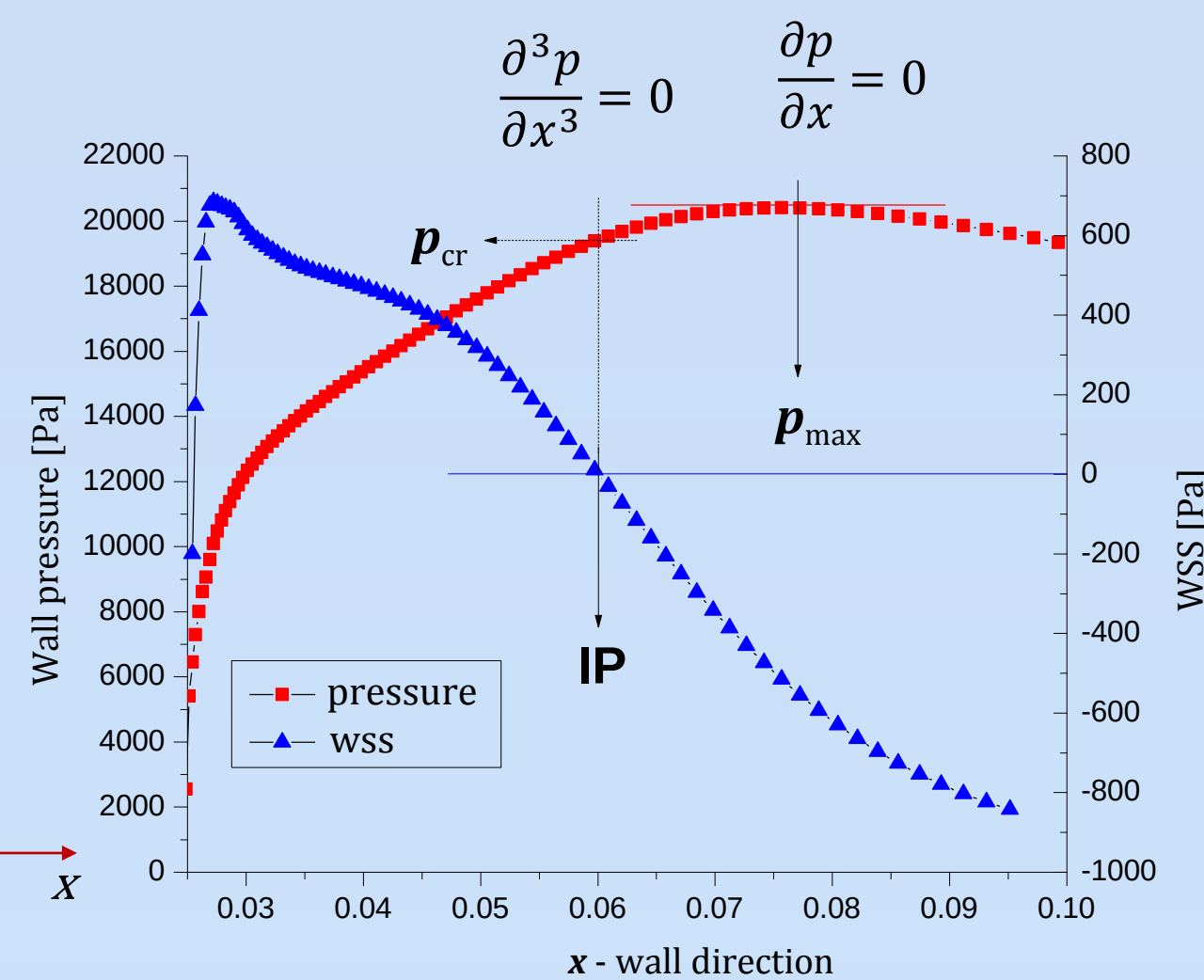
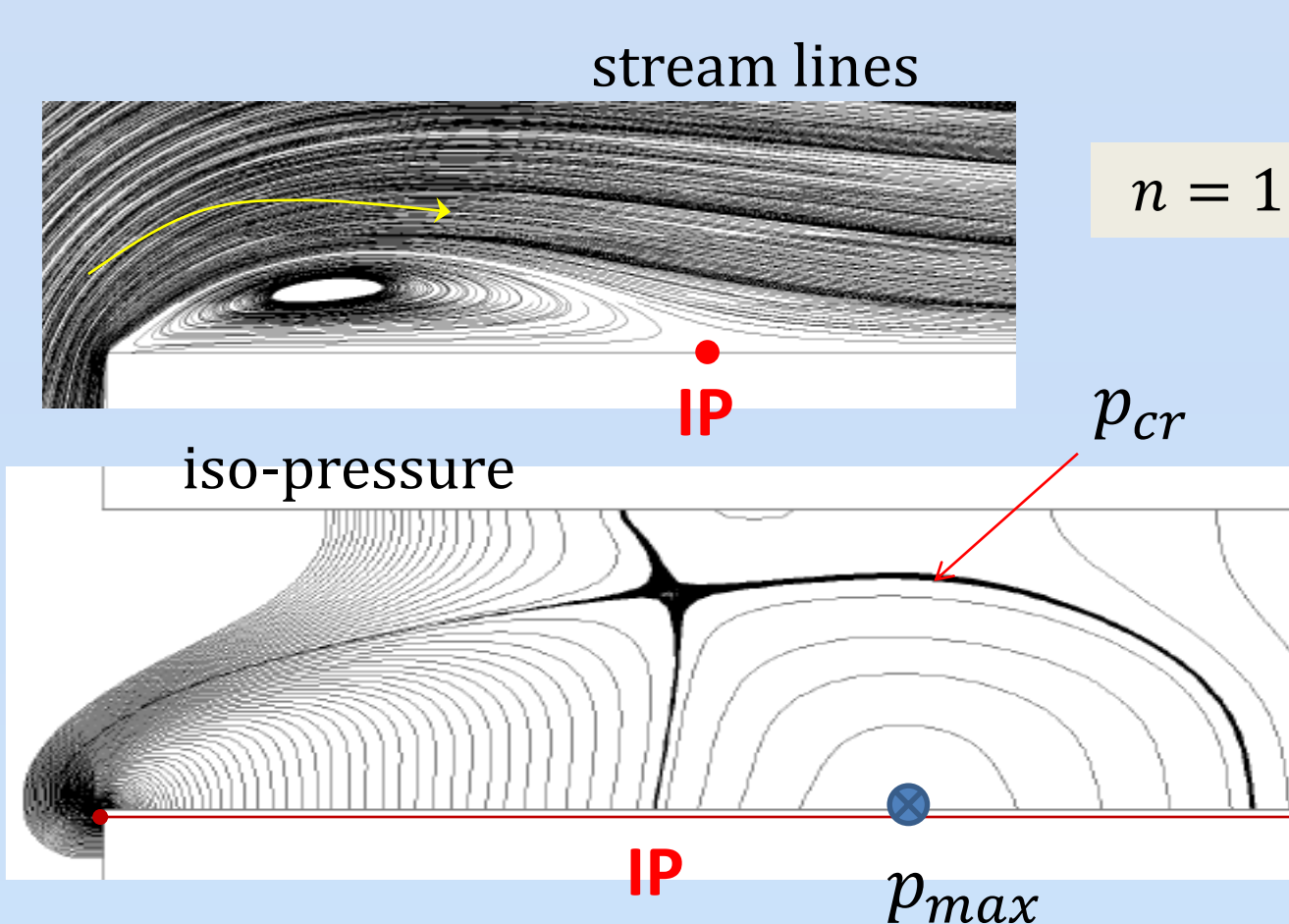


The locations on solid surfaces of the critical points: impact point – IP and separation point – SP, where $WSS = 0$, are related with the wall pressure distribution; the influence of the shear thinning viscosity.

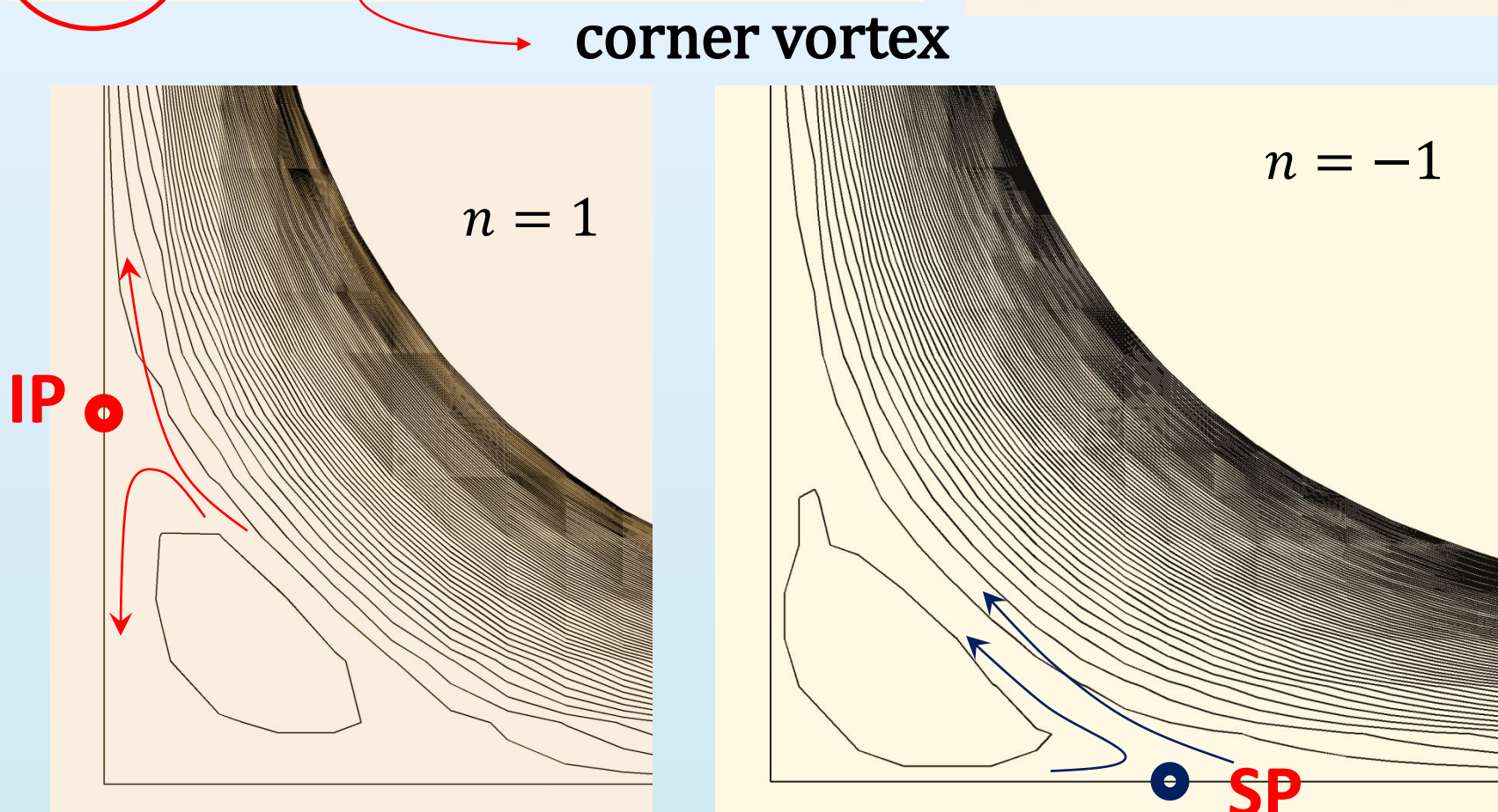
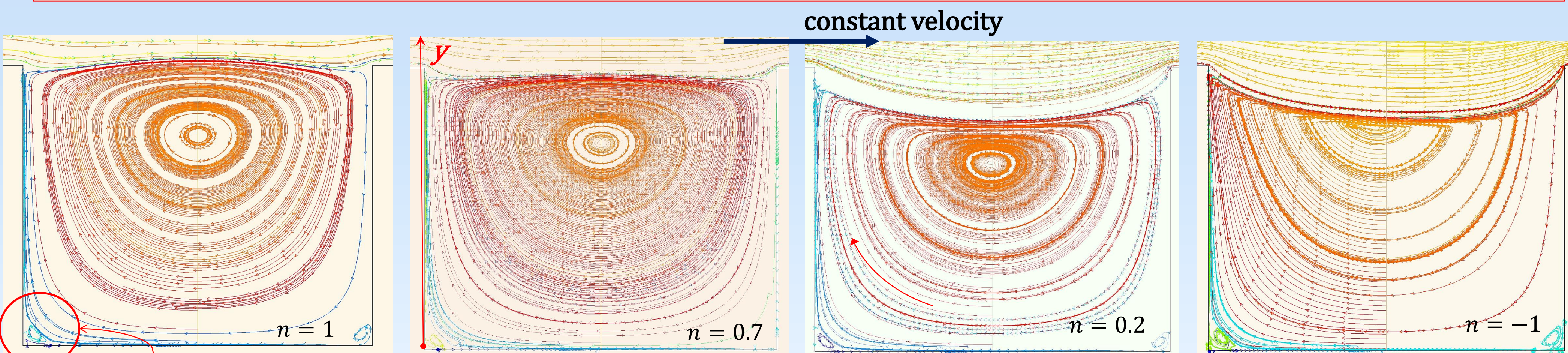
IP and SP in the Taylor-Couette flow
(iso-pressure and stream lines)



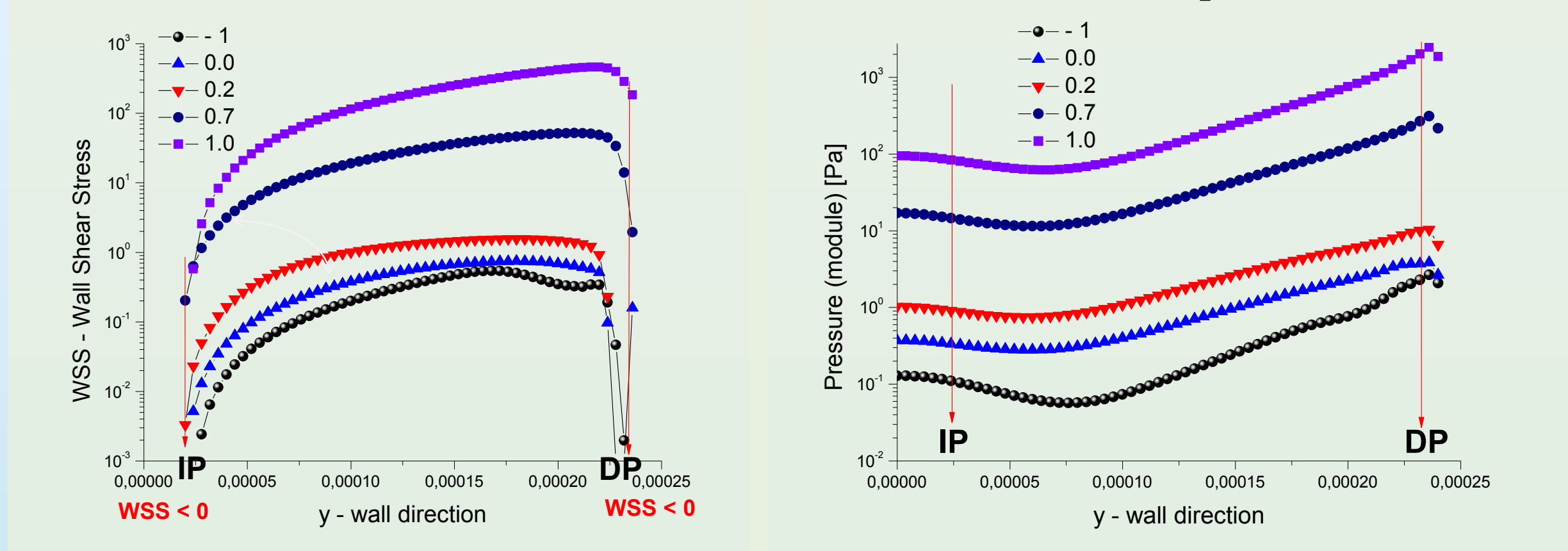
Poiseuille flow in a channel



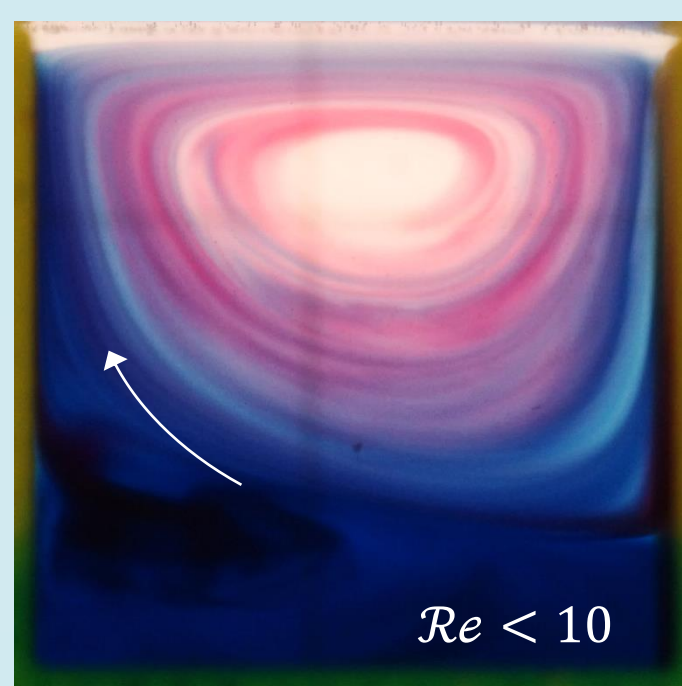
VORTICES FORMATION IN THE VICINITY OF PATTERNED SURFACES WITH CAVITIES AND PILLARS



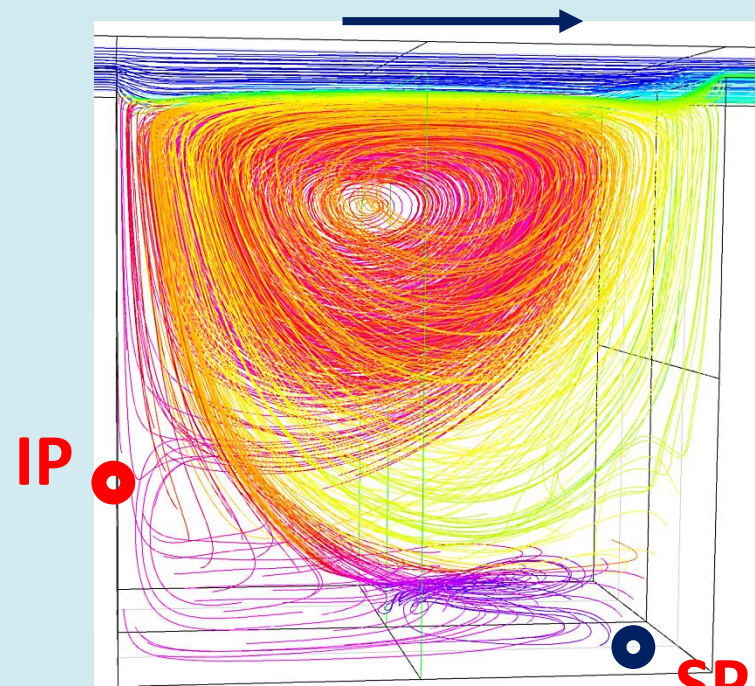
wall stresses distribution and location of critical points



Experiments



Numerics



upper rotational plate in vicinity of pillars

