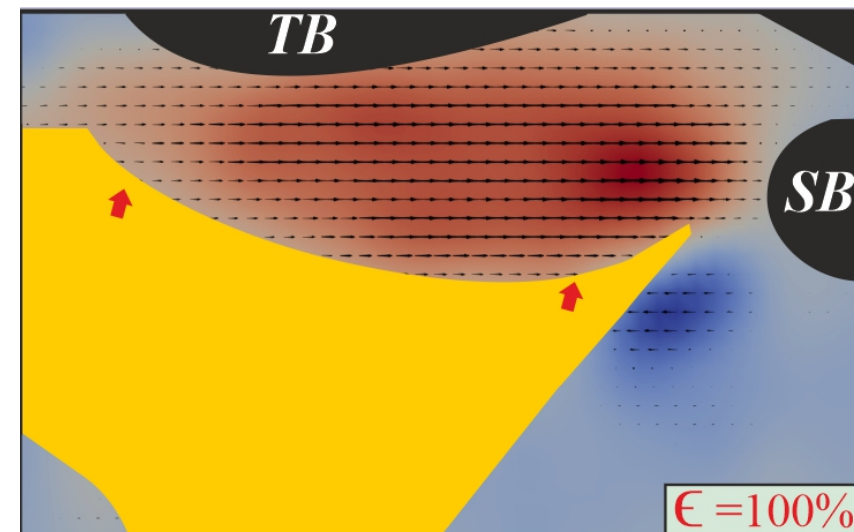
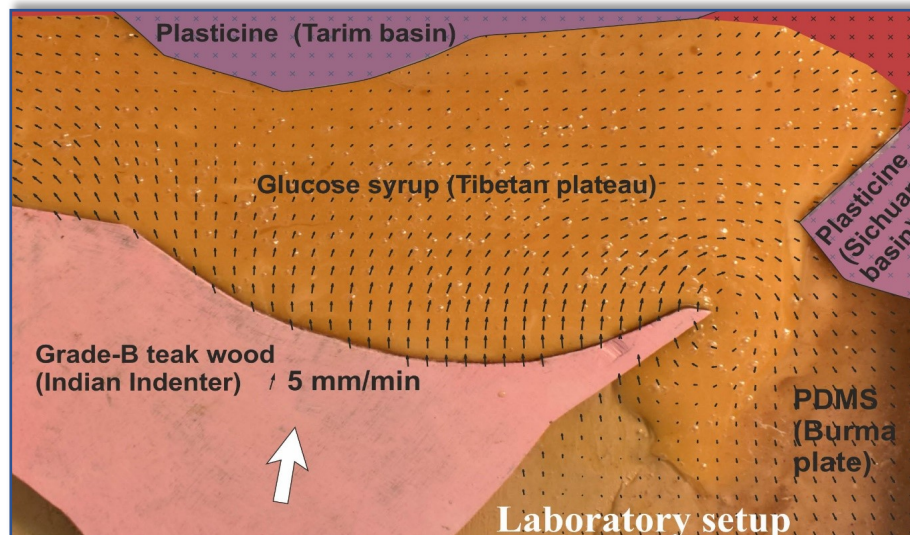


# Tectonic transitions in the Tibetan Plateau during India-Asia collision: Findings from scaled laboratory models

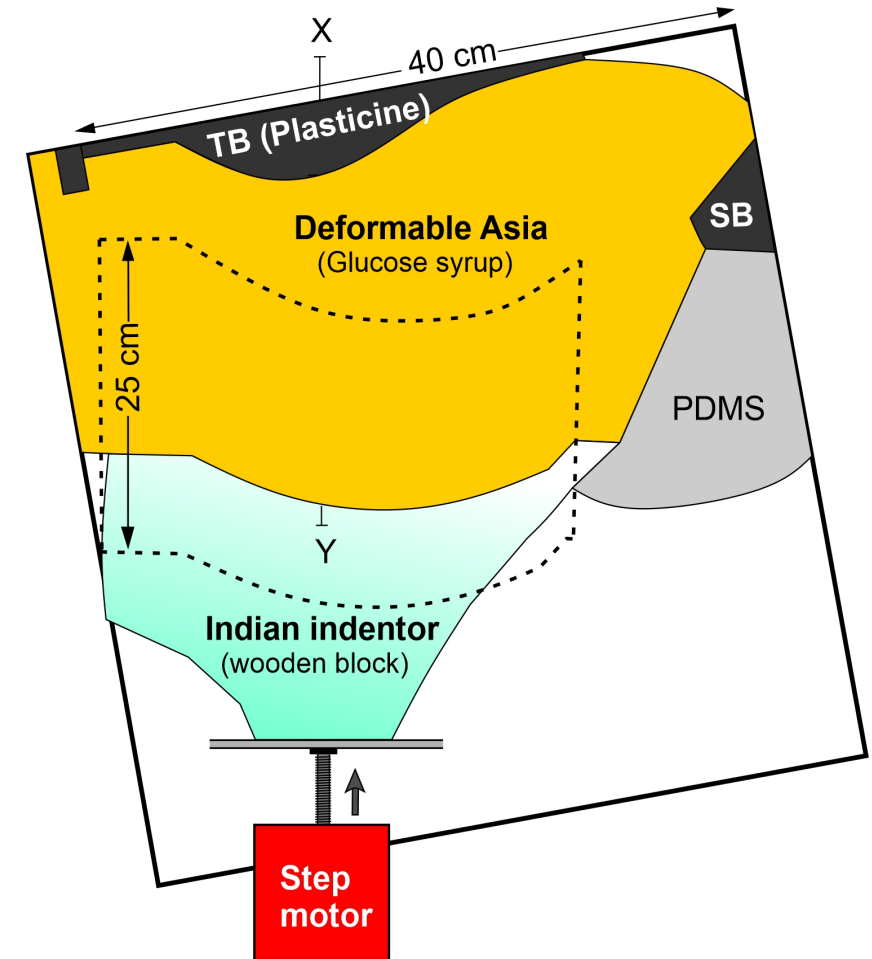
*\*Arnab Roy, Giridas Maiti, Joyjeet Sen, Nibir Mandal*  
*Dept. of Geological Sciences, Jadavpur University, India.*

AGU Fall Meeting: December 10, 2020  
AGU Abstract ID: 700806



# The aim of our study

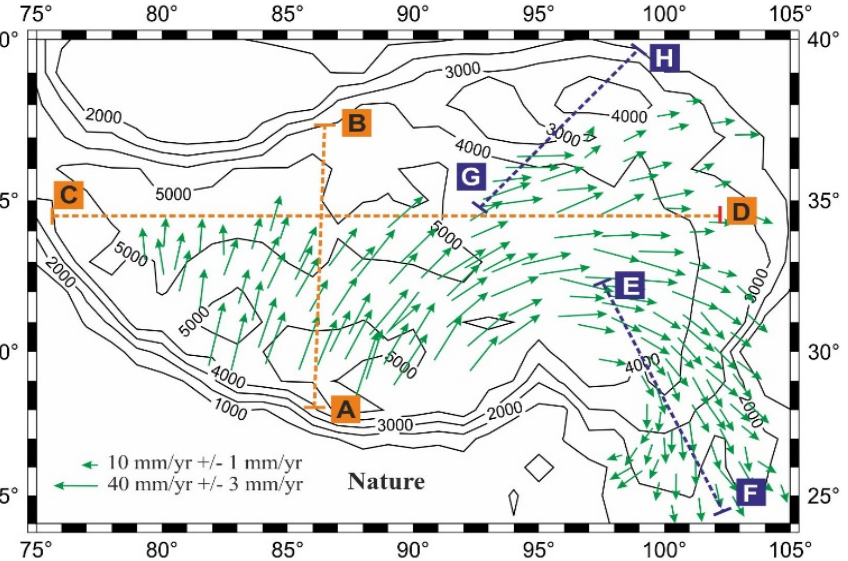
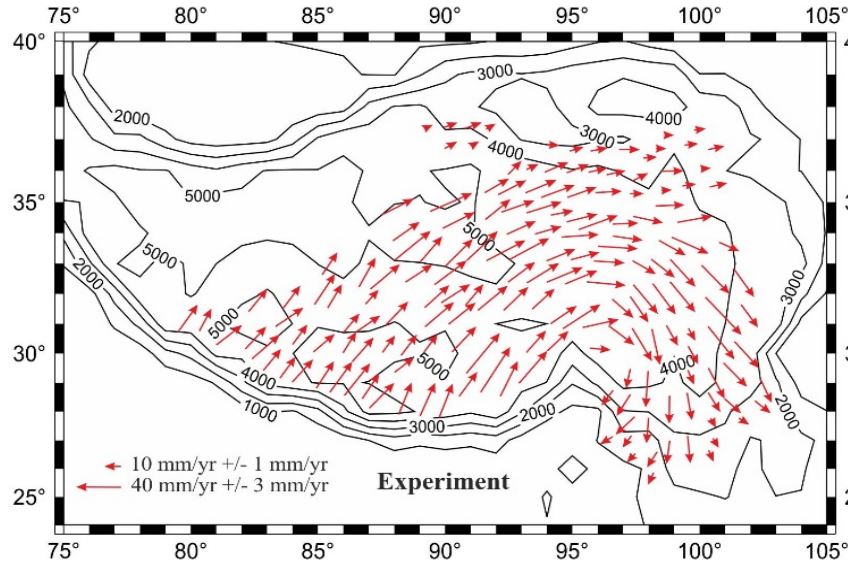
- To explore the **influence of the Indo- Asian collisional dynamics** in creating the present day **extensional regime** within the Tibetan Plateau.
- To understand the fundamental issues related to how the **E-W topographic gradient** in the Tibetan Plateau **came into existence** and what triggered the **gravitational collapse** of the plateau in the India- Asia collisional history.
- To review the **influence of the lateral crustal heterogeneities** (Tarim, Sichuan etc ) around the Tibetan Plateau, in the **evolution of the Tibetan crustal flow**.



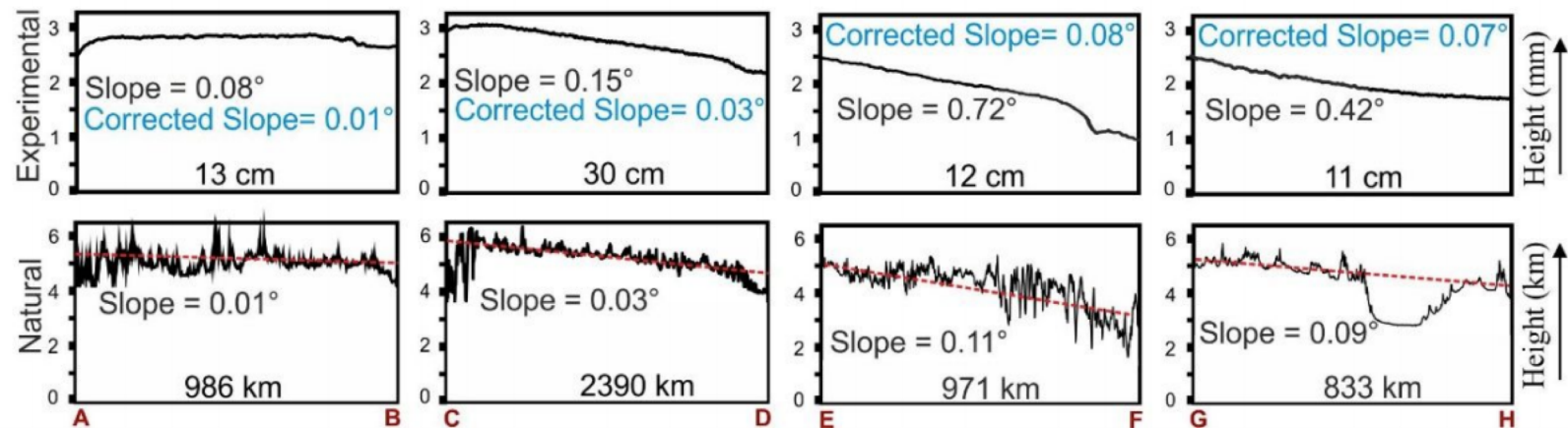
*A schematic presentation (plan view) of the laboratory setup.*

Comparison of model results with natural data shows very good consistency.

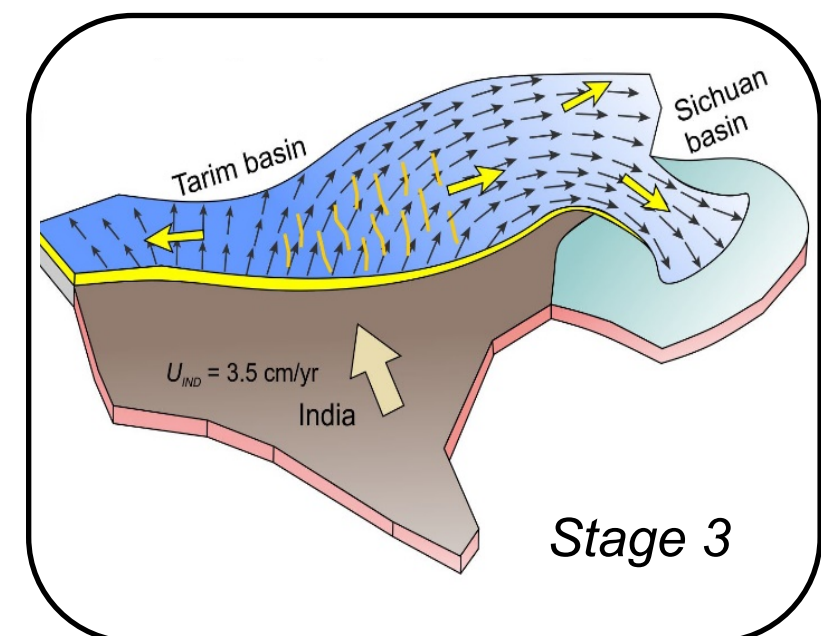
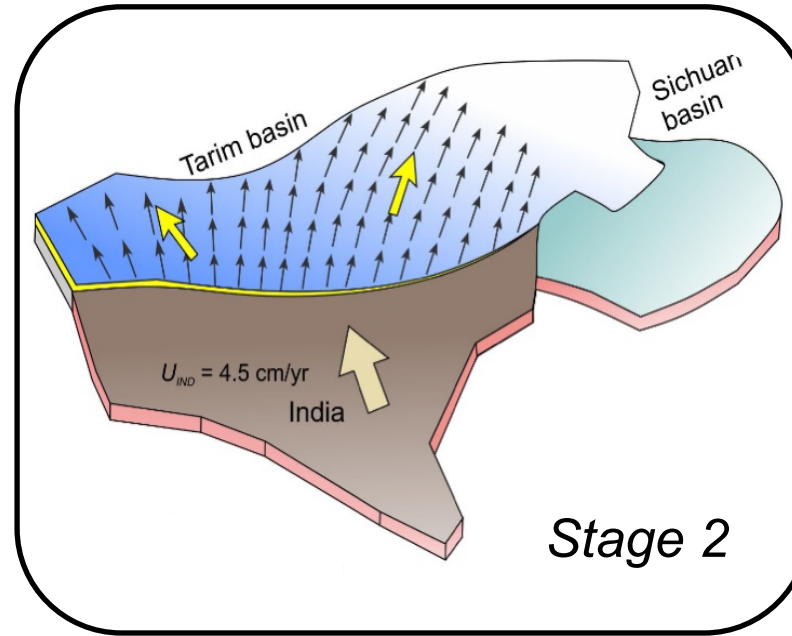
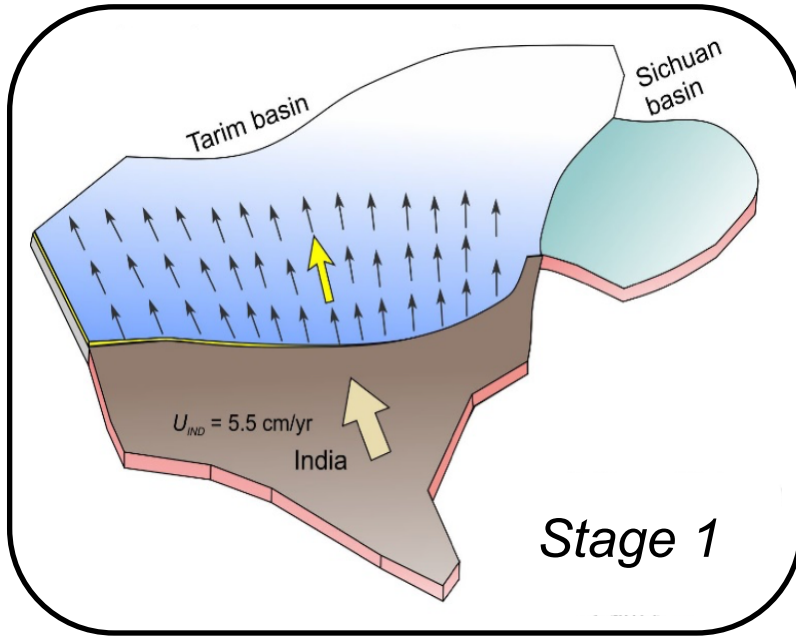
**Comparison of surface  
velocity**



**Comparison of  
topographic profile**







*A cartoon representation of the three-stage evolution of crustal-flow pattern in the Tibetan plateau with decreasing Indian indentation velocity ( $U_{IND}$ ).*

This study explains the **onset of E-W extension in Tibet** as a consequence of **decreasing Indian indentation velocity** in India-Asia collision history.

**ARNAB ROY**

CSIR- SRF FELLOW, HPT LAB,  
JADAVPUR UNIVERSITY

Profile : [https://www.researchgate.net/profile/Arnab\\_Roy6](https://www.researchgate.net/profile/Arnab_Roy6)

Mail: royarnabroy18@gmail.com