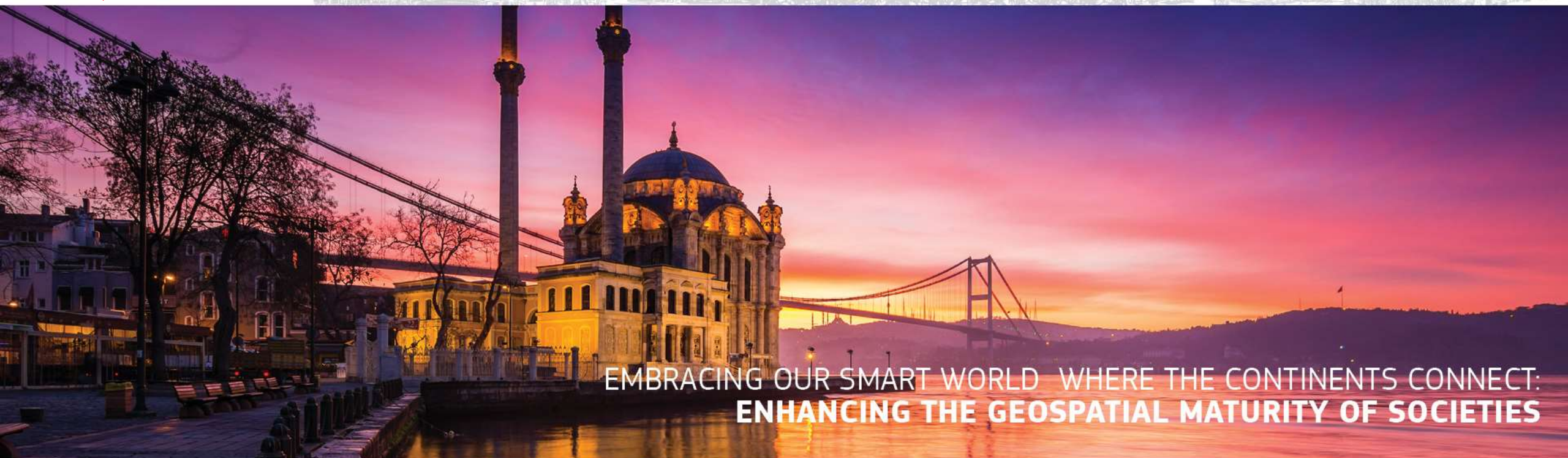




XXVI FIG CONGRESS

8-11 May 2018, İstanbul

Progress Towards a Semi-Dynamic Datum for Nepal After the 2015 Gorka Earthquake



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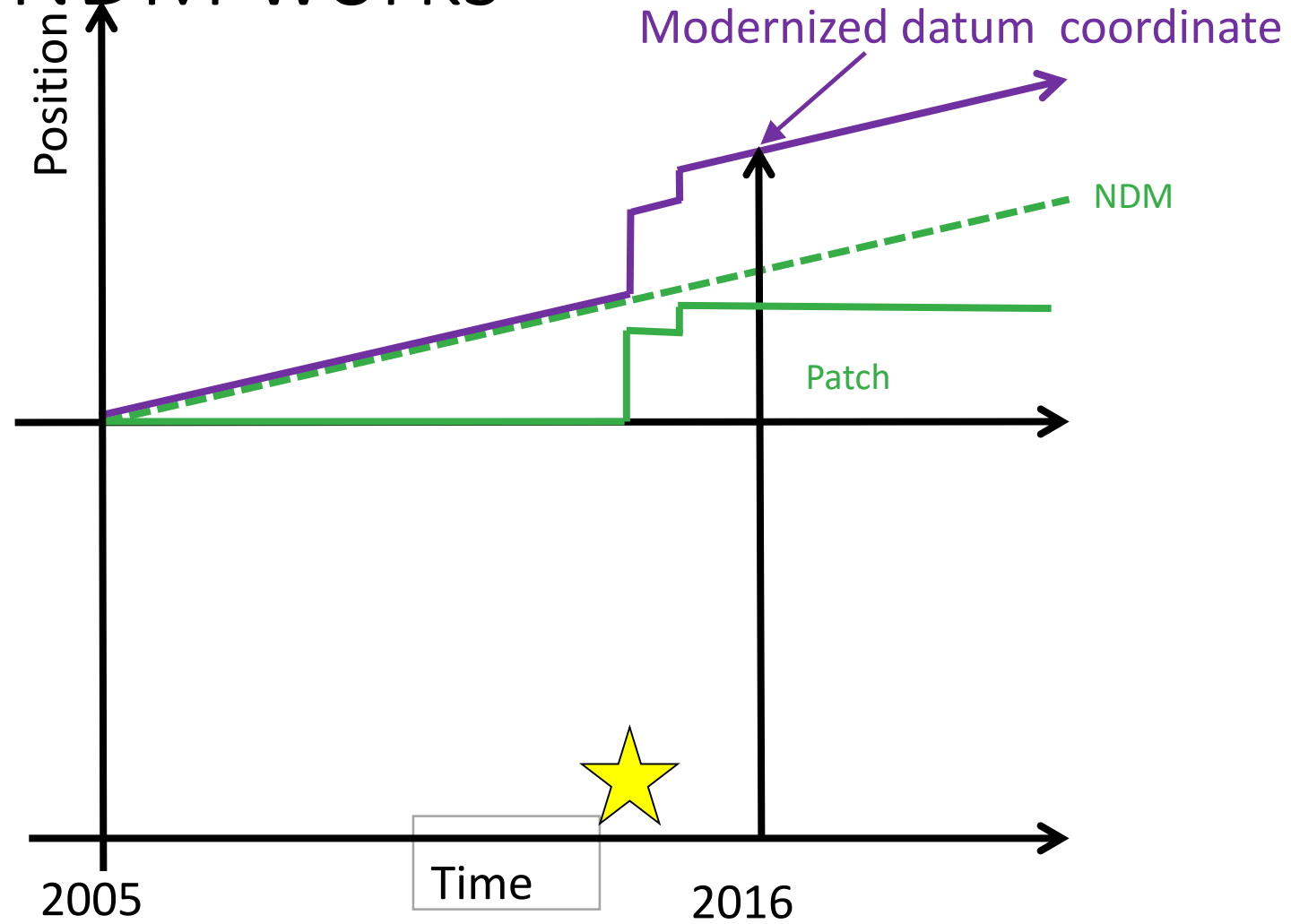
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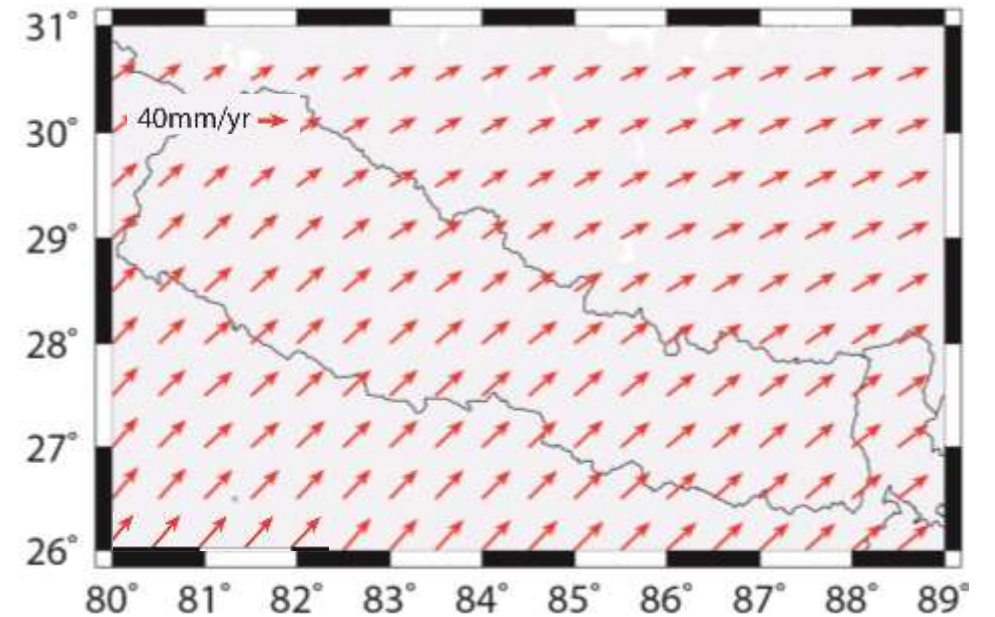
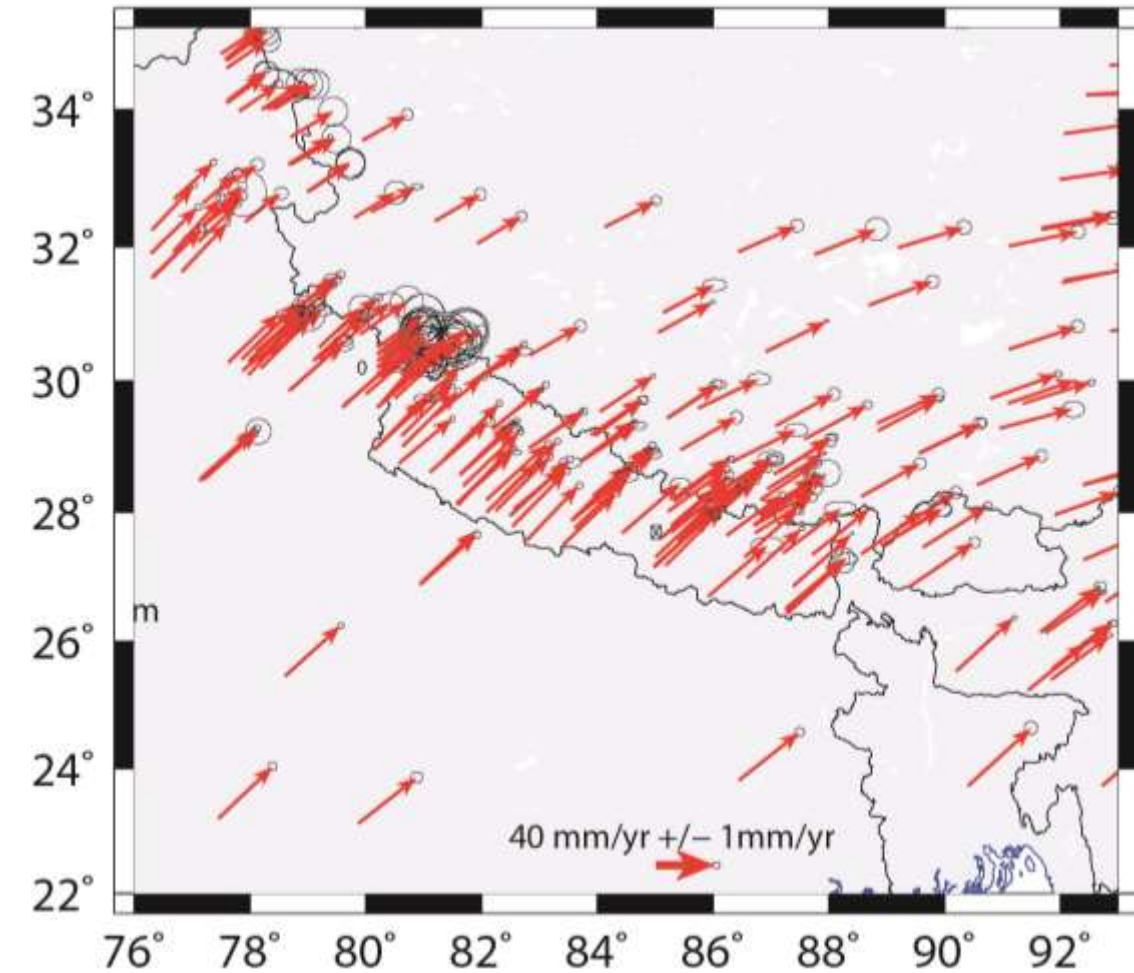
Chris Pearson, Puran Chaudhary and Paul Denys

How the NDM works



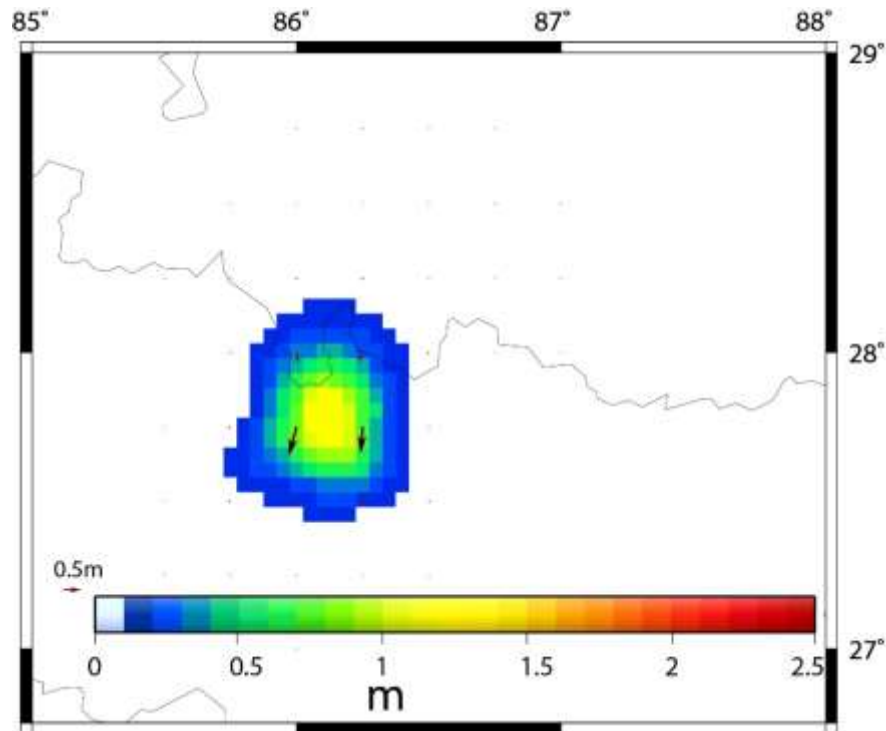
Secular velocity field

- Velocity from four recent studies were aligned with the ITRF2014 velocities

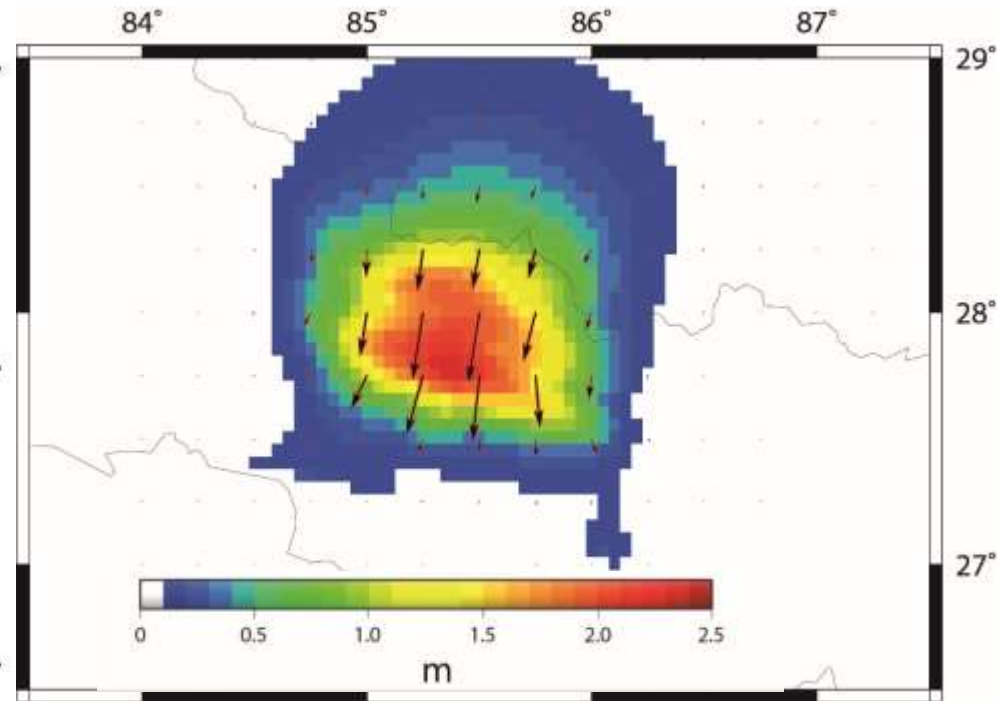


models for 2015 Earthquake & aftershock

May 15 afteshock



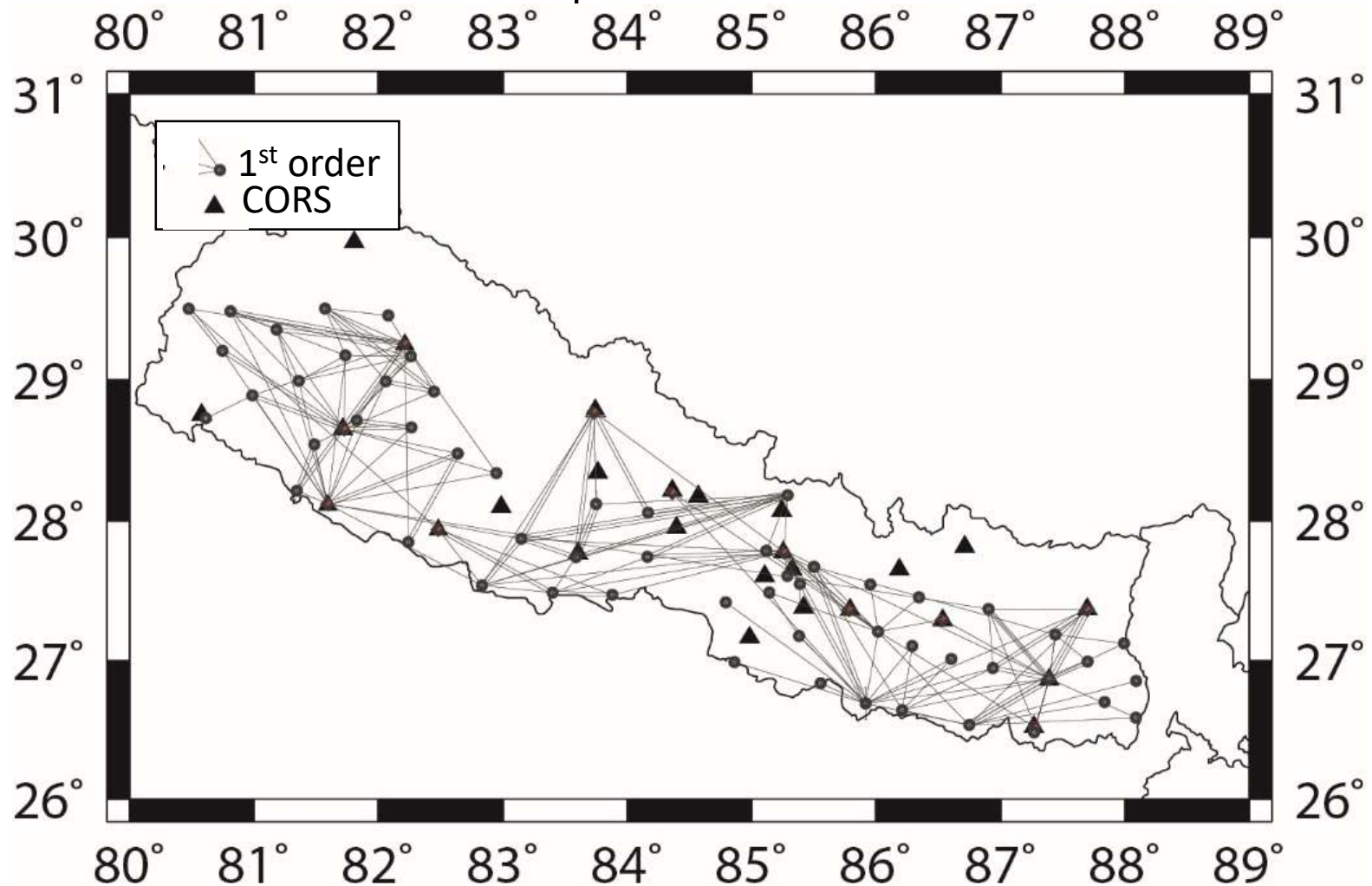
April 2015 Gorka Earthquake



Wang et al (SOPAC)

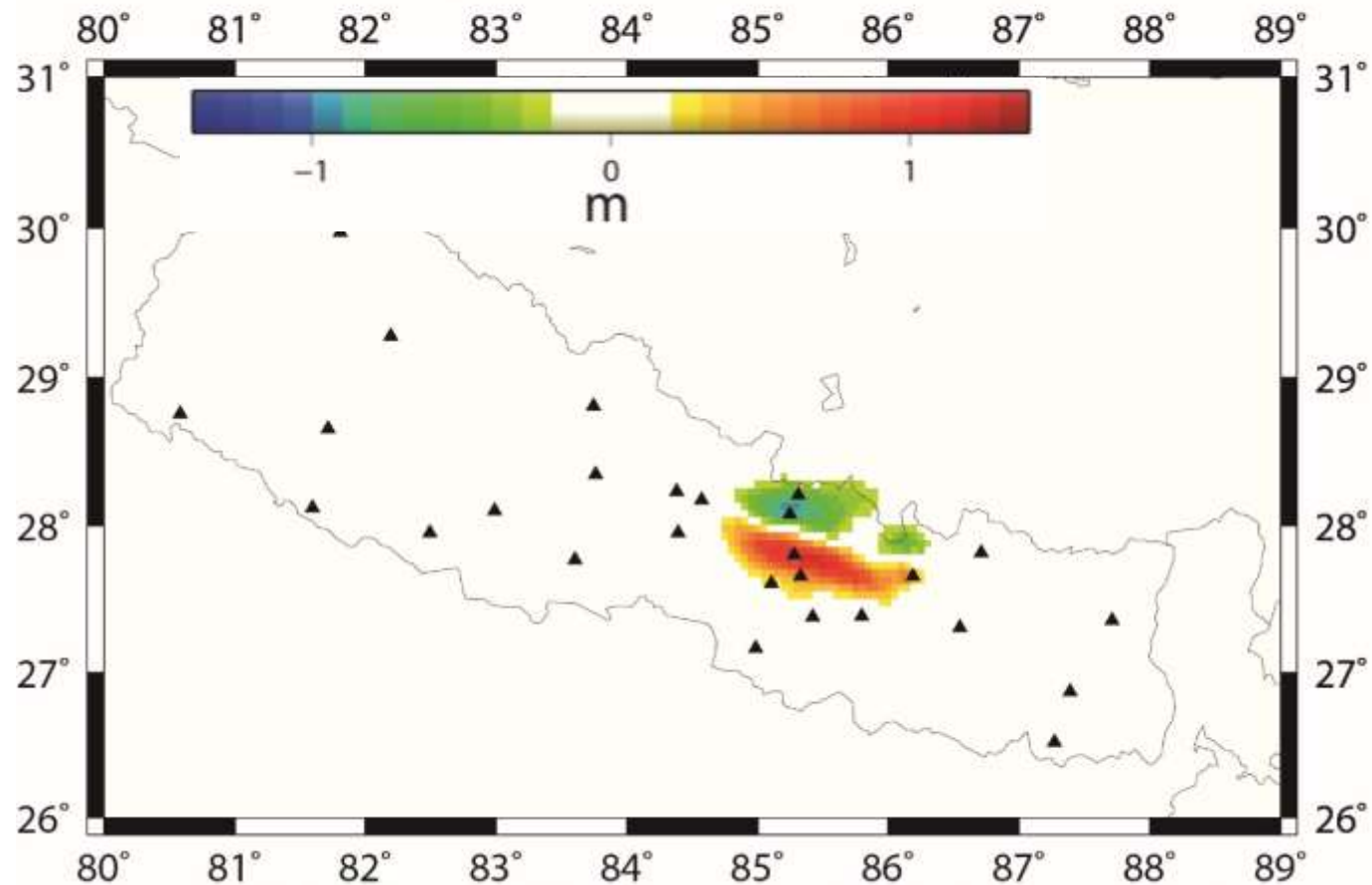
First Order adjustment Preliminary results

- Data from 2009-2016
- 222 baselines 217 used 5 rejections
- RMS residuals E=2cm N=3cm up=7cm



Combined vertical displacements from Gorka earthquake and May aftershock

Nepal comb disp



3D view of geoid of Nepal

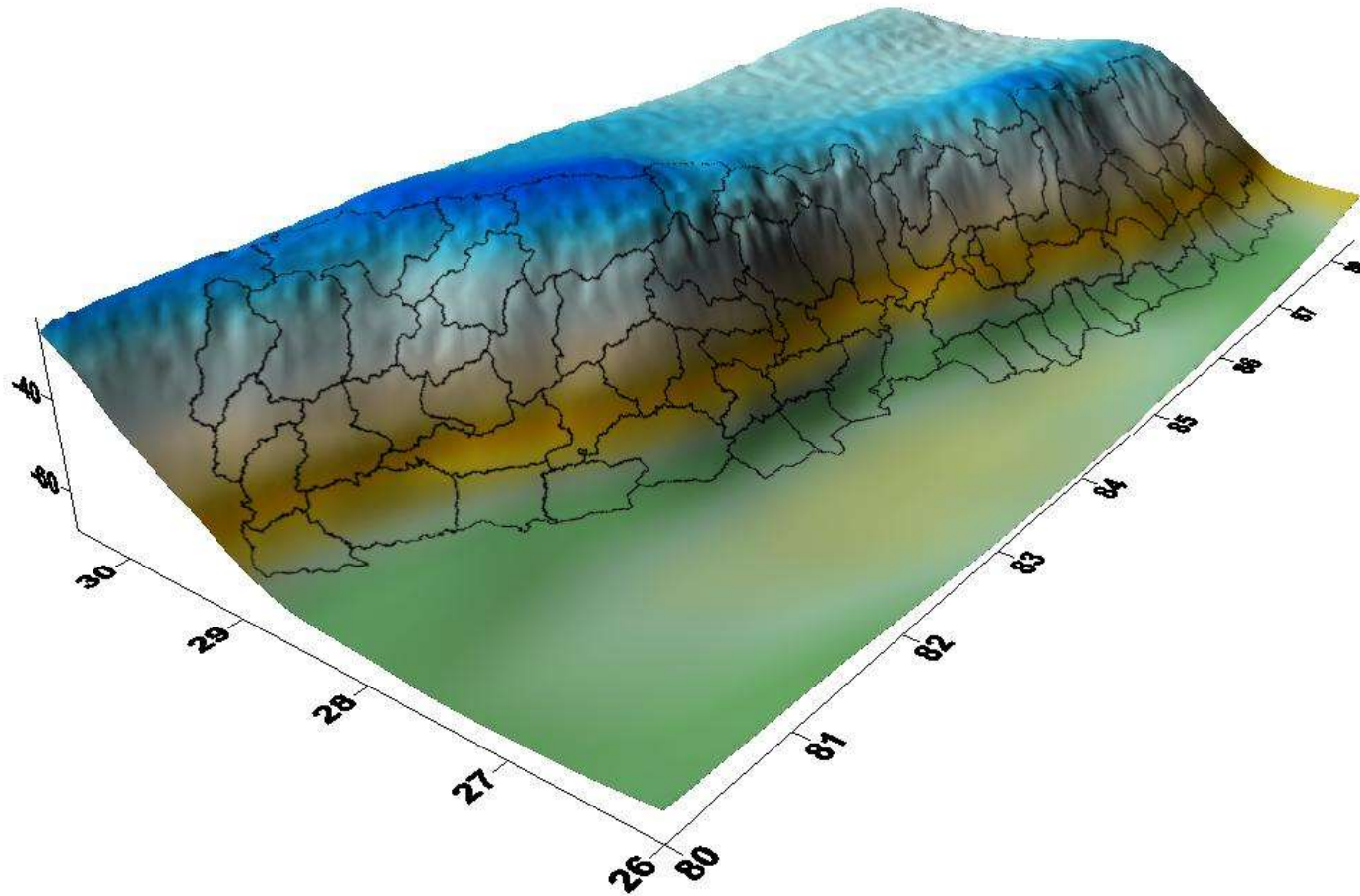


Fig. 3D view of geoid of Nepal.

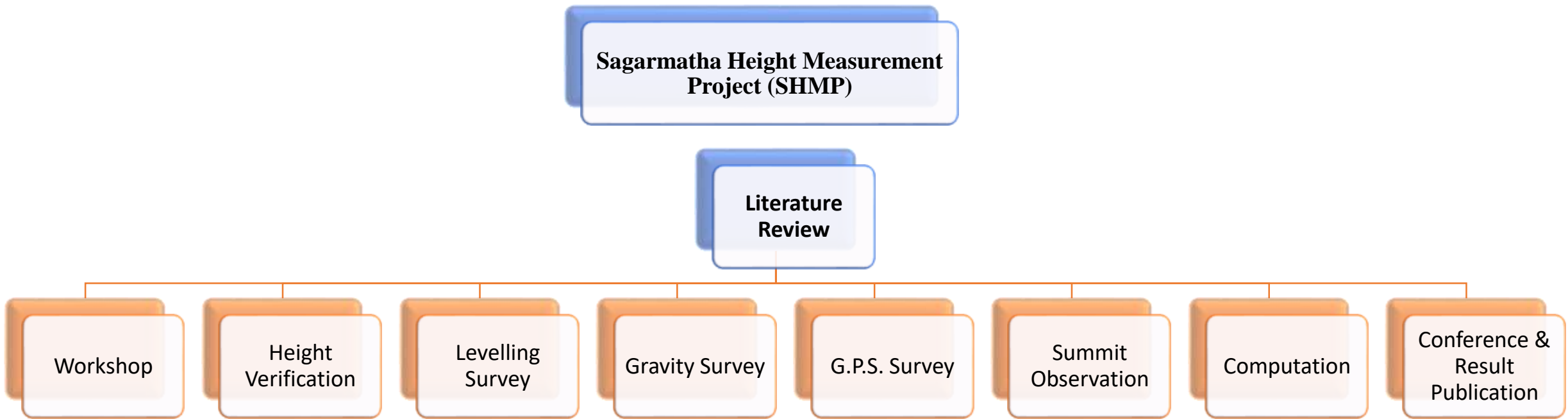


Mount Everest.....

National Space Institute DTU
and Survey Department of Nepal

Methodology

- **Sagarmatha Height Measurement Project (SHMP)** consists of following activities



Conclusions

- The proposed semi-dynamic datum for Nepal has an epoch date of 2016, after the end of the earthquake sequence.
- The deformation model has a secular velocity field based on 4 published studies and patches for the April Gorka Earthquake and its May aftershock. It also has a model of post seismic relaxation.
- We have started the process of realizing the datum with a readjustment of the first order network. The vertical network remains severely disrupted from the Kathmandu Valley through to the Chinese Boarder
- The upcoming Sagarmatha (Mt. Everest) Height Measurement Project (SHMP) will provide a basis to improve Nepal's vertical datum.