Non-Stationary Scenarios

TOPS InSAR Coreg Fundamentals

Brief theoretical intermezzo:

Sensitivity of InSAR phase on coreg errors

$$\phi_{\text{az\_err}}(r,t) = 2\pi f_{\text{DC}}(r,t)\Delta t$$

$$\phi_{\text{rg\_err}}(r,t) = \frac{4\pi}{\lambda}\Delta r\left[1-\sqrt{1-\left(\frac{\lambda f_{\text{DC}}(r,t)}{2v}\right)^2}\right]$$

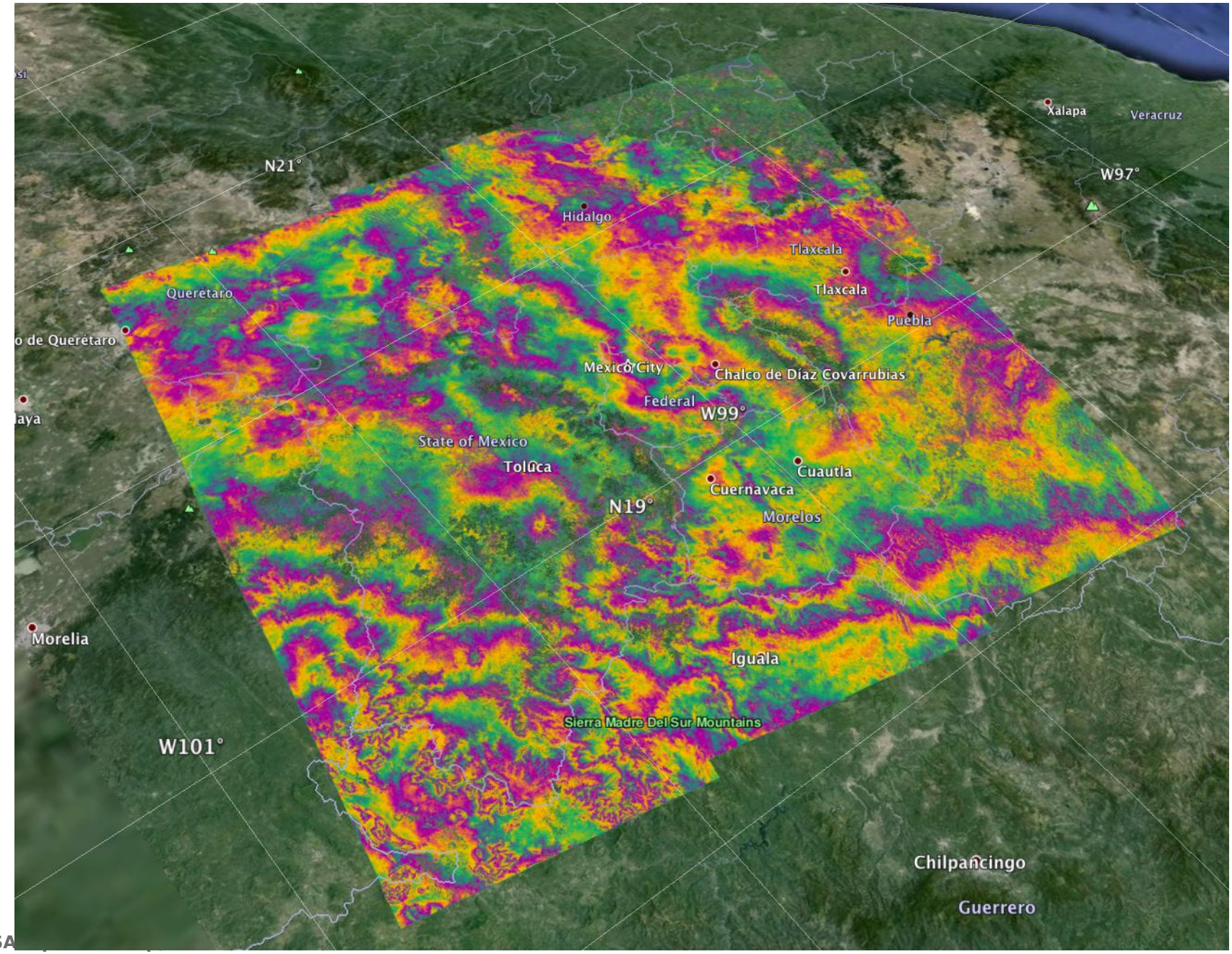
Review of “overlap zones”

Phase of overlap zones of:

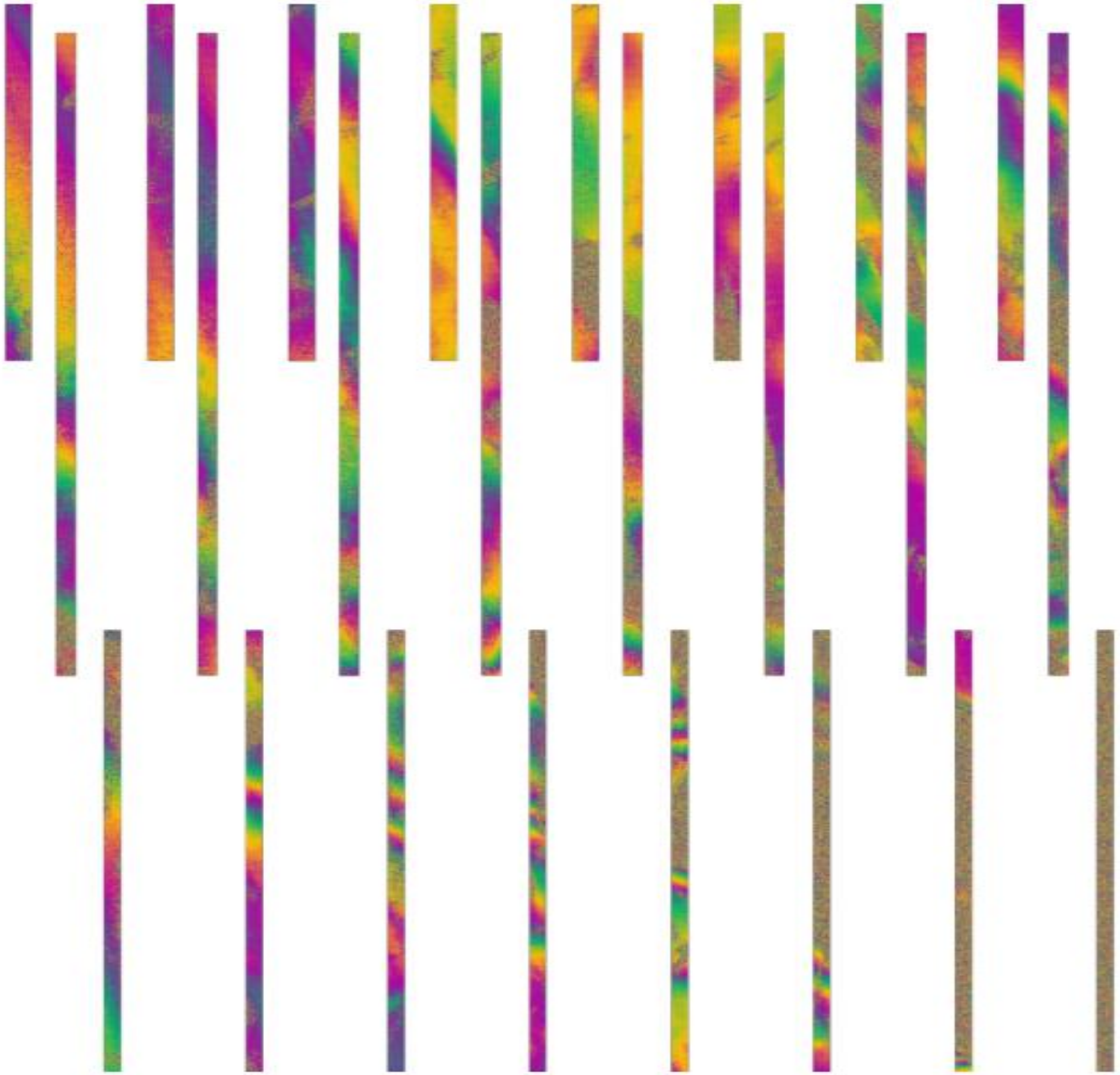
'*Mexico City*'

real RSAT2 TOPS data

Mexico City – R2 TOPS Ifg



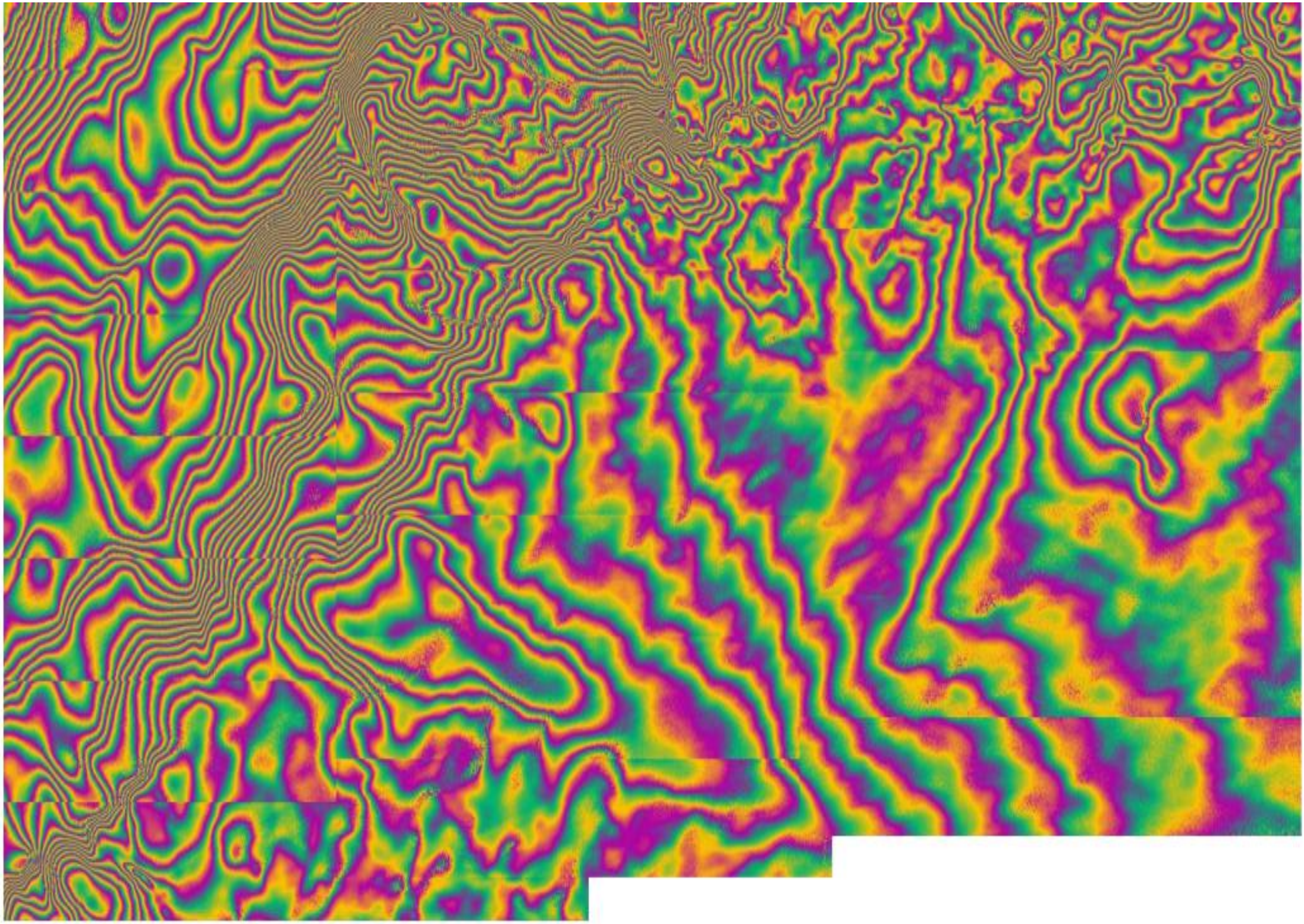
However – non-stationary scenes

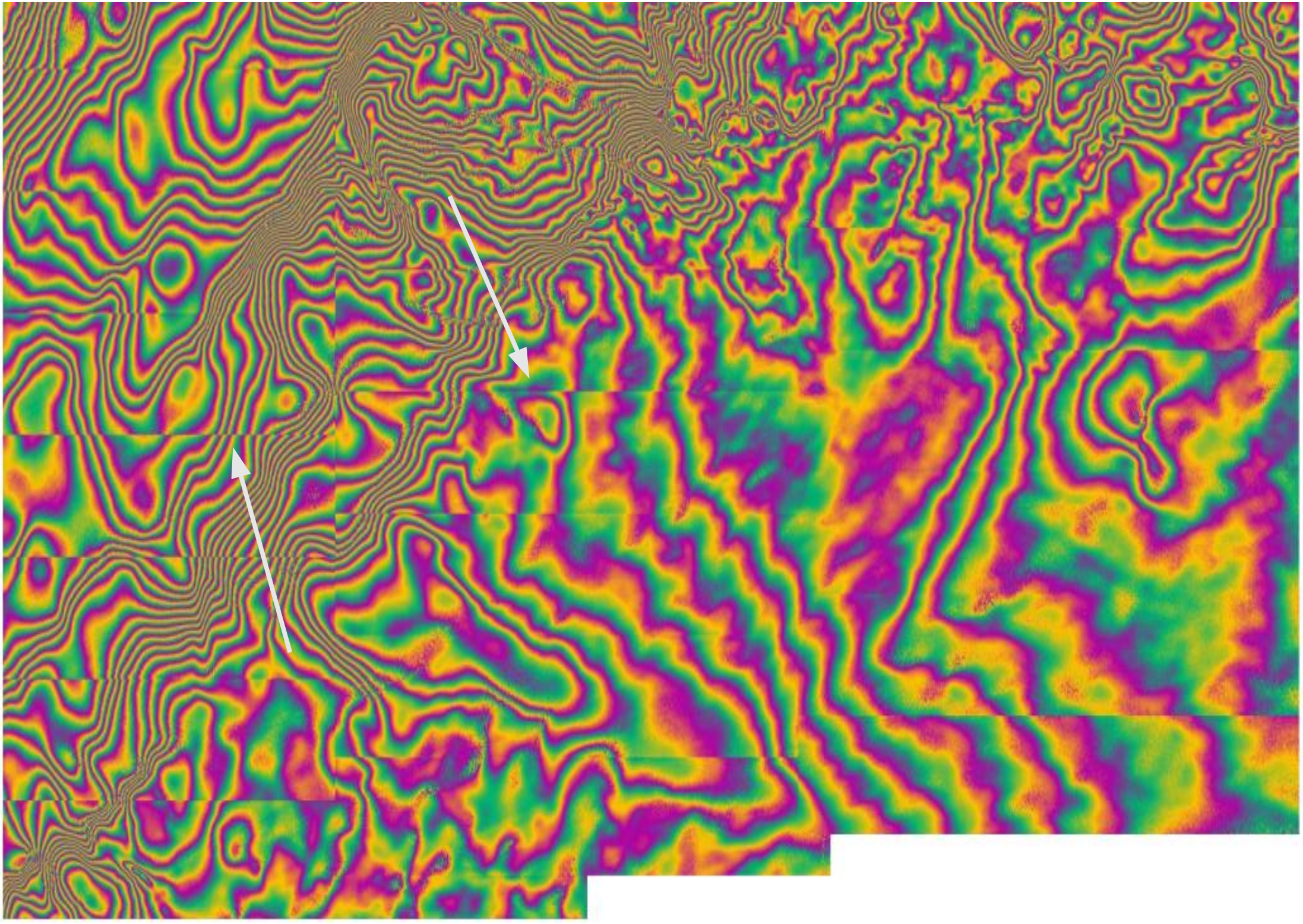


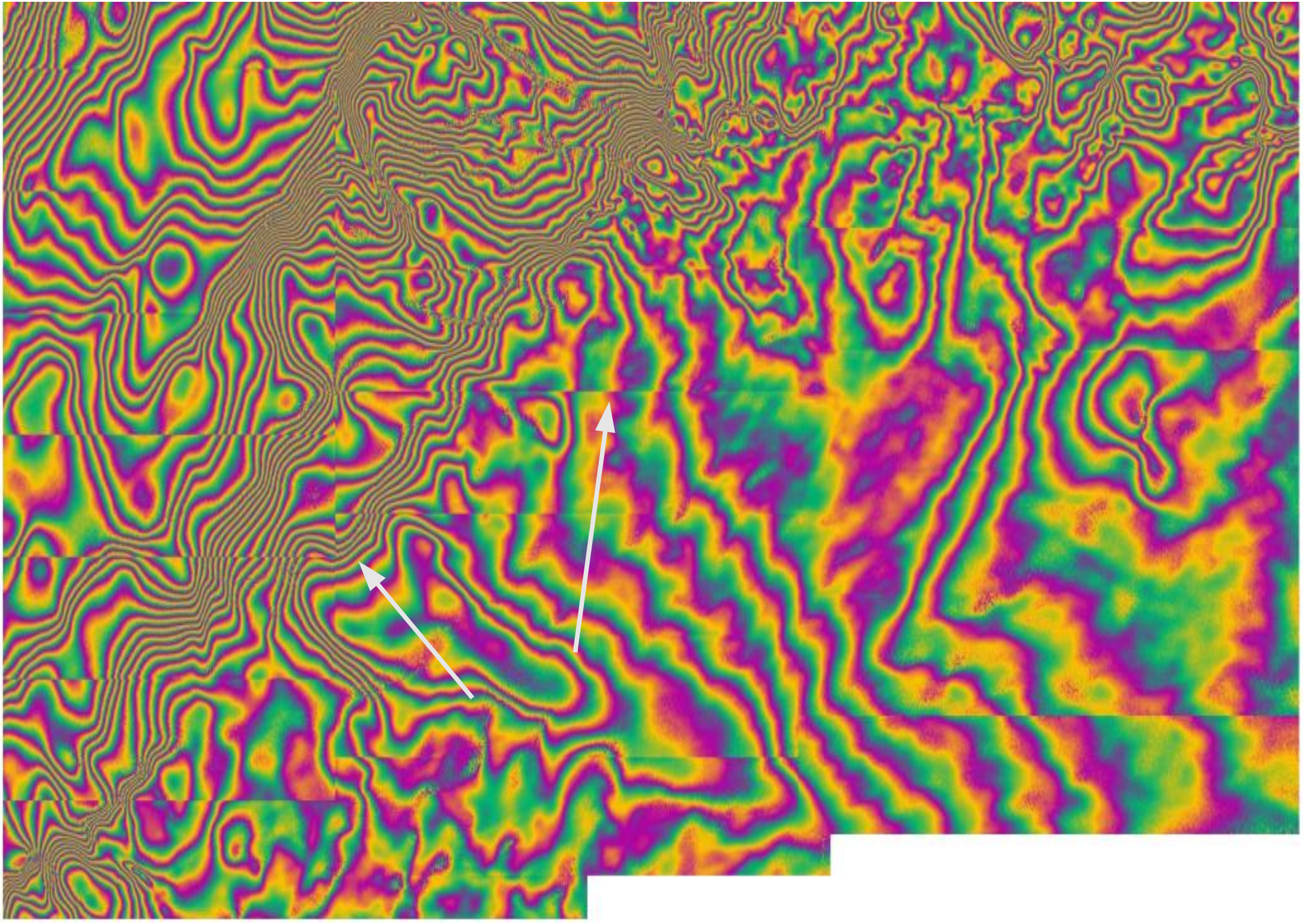
Phase of overlap zones of:

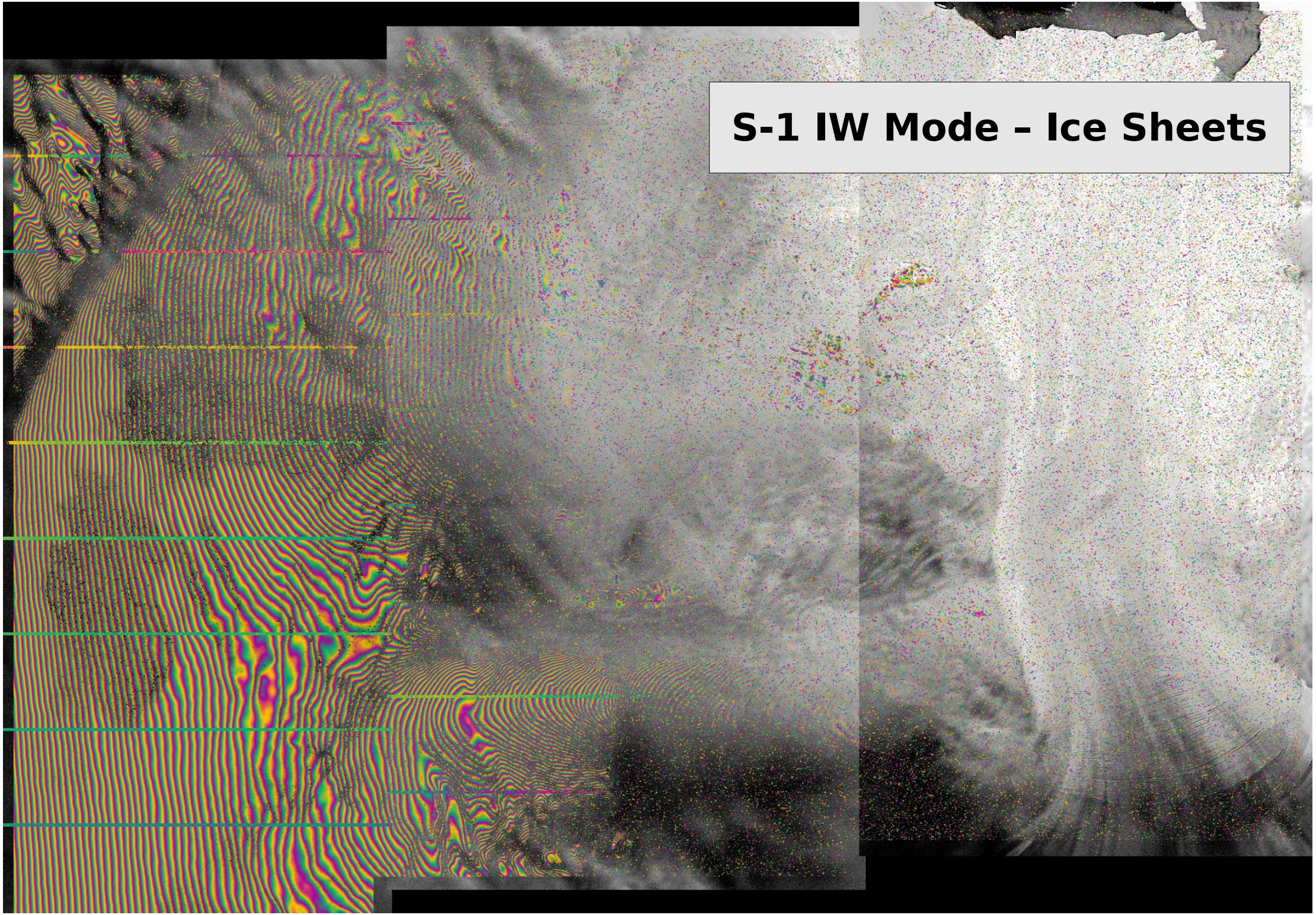
'*Lambert Glacier*'

real R2 TOPS data








S-1 IW Mode – Ice Sheets

Non-stationary summary

- As in many other cases… an opportunity to do more!
- We have a direct measure of the azimuth (horizontal) motion component