The 2018 Fani Maoré submarine eruption offshore Mayotte (Indian Ocean): Insights on fine-scale morphologies from ROV high-resolution bathymetry and optical observations

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What?
Using lava flow morphology as a proxy to understand the dynamics of submarine eruptions

Where?
- Fani Maoré submarine volcano
- Offshore Mayotte Island (Indian Ocean)
- Largest submarine eruption ever recorded

How?
- High-resolution bathymetry data (~2 m)
- Optical imagery from submarines

Ship-based bathymetry (resolution: ~30 m)

ROV microbathymetry (resolution: ~ 1-2 m)

Water depth (m)

Pillow lava

Volcaniclastic deposits

Lava flow direction

Lava flow direction

Height:Diameter ratio of 1:2

...logies and eruptive processes

...and spatial variability of lava

...ng of deep-sea volcanic processes

Lobate lava covered with fine deposits

Bulbous pillow

Scarp

- Lobate lava
- Pillow lava
- Scarp
- Talus
- 100 % fine deposits

0   250 m

Water depth (m)

Tephra-covered pillow lavas

Hydrothermal chimney

3 m

Talus