1. Subduction P-T-D-t paths

Deformation-metamorphism histories of exhumed subduction shear zones provide constraints on interface architecture and thermal structure.

Rocks on Syros Island (Cyclades, Greece) record Eocene subduction to blueschist-eclogite facies conditions. The structural evolution, peak P-T, and timing of subduction-exhumation are debated, but crucial to understanding subduction interface processes.

2. Geology of Syros Island

3. New structural, petrologic, and geochronologic constraints

Subduction and exhumation are marked by kinematic rotations and down-section younging of fabric development.

36 Ma - Exhumation of central and southern slices (D3), strain localization towards base

50 Ma - Imbrication of central slice (D3) and exhumation of northern slice (D1)

53 Ma - Subduction of the northern tectonic slice to peak conditions (D)

4. Revised Tectonic Model for the CBU on Syros

50 Ma - Subduction of the northern tectonic slice to peak conditions (D)

53 Ma - Subduction of the northern tectonic slice to peak conditions (D)

50 Ma - Imbrication of central slice (D3) and exhumation of northern slice (D1)

53 Ma - Subduction of the northern tectonic slice to peak conditions (D)

Diagnostic Structural Elements:
1. Top-to-the-SSW asymmetric shearing
2. Repetition of marker assemblages (Syringas)
3. Upright folding, top-NE extension (exhumation)
4. Revised Tectonic Model for the CBU on Syros

FUNDING: NSF GRFP (AK), NSF Career (EAR-1555346, WB), NSF (EAR-1725110, WB, JB, DS), JSG Seed (JB, WB, DS), JSG Graduate Research Fellowships (AK, MC)

Scan me for the Open Access Paper!