

**1. Background**

- Boron and its stable isotopes ($\delta^{11}$B and $\delta^{10}$B) a key tracer of slab components under volcanic arcs:
  - Low mantle conc (<0.1 ppm)
  - Strong fluid partitioning, with concomitant isotope fractionation

- Modified summary of slab components. Note the high B concentration in all slab components, and their highly variable $\delta^{13}$N components where subduction has ceased.

- Only handful of studies used B to investigate impact of slab components under volcanic arcs:
  - Boron and its stable isotopes (11B and 10B) a key tracer of slab components
  - Strong fluid partitioning, with concomitant isotope fractionation

- Low mantle conc (<0.1 ppm)

**2. New Results**

- First B isotope data for young volcanic rocks from modern continent-continent collision.

**3. Inherited slab signature: amphibole sponge**

- Consistent isotope composition over time (Fig. 5) — long-lived reservoir, inherited from previous subduction.
- Stored in lithosphere — lower T — Stable metasomatic phases: amphibole.

**4. Long live the sediment melt!?**

- Light $\delta^{11}$B, low B/Nb + 143Nd/144Nd (Figs 4, 5) — NOT serpentinite aqueous fluid.
- Lack of aqueous fluid not inherited from hot subduction zone (Fig. 10) — fluids transitory, sediment melts long-lived.

**5. Conclusions**

- Post-collisional B + $\delta^{11}$B distinct from both MORB and arcs.
- B signature inherited from previous subduction and stored in an amphibole sponge in the lithosphere.
- Slab component dominated by sediment melts.

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References:

Pliocene-Quaternary post-collisional volcanoes

- SUGDEN, P. J. [1], SAVOV, I. P. [1], AGOSTINI, S. [2], WILSON, M. [1], HALAMA, R. [3], MELIKSETIAN, K. [4].

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