West Andaman Fault Determined to Be Strike Slip, Rather Than Back Thrust

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Before the devastating tsunami hit Sumatra on 26 December 2004, not much was known about the fault zones located offshore Sumatra in the Indian Ocean. Since then, geologists have set out to study the subduction margin’s structure and dynamics for future mitigation of earthquake hazards.

Martin et al. characterized a structure called the West Andaman Fault (WAF) zone to determine its role in the dynamics of the region. The authors used seismic data and bathymetry measurements to create a three-dimensional picture of the area and to determine what kind of fault the WAF is.

Although previous research has proposed that the WAF may be a back-thrust fault branching from the main subduction fault, the authors found structures that contradicted that suggestion. The authors found a feature called a “pop-up flower structure,” which is characteristic of transpression—when a strike-slip fault experiences horizontal shortening. The authors conclude that the WAS is primarily a strike-slip fault.

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