

Catalogue augmentation for large volcanic eruptions

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Any given volcano has only a short record of large eruptions, and it is tempting to augment this record with those of similar volcanoes, in order to make more useful predictions. Hierarchical modelling and exchangeability provide the natural framework for this, but the only really intuitive and tractable situation occurs when we treat each volcano's recent large eruptions as following a homogenous Poisson process with unknown (but volcano-specific) rate. Using a recently constructed database of large eruptions, I examine this hypothesis using bounds on Bayes factors, where the alternative is some form of clustering.