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# Slow rock fracture as eruption precursor at Soufriere Hills

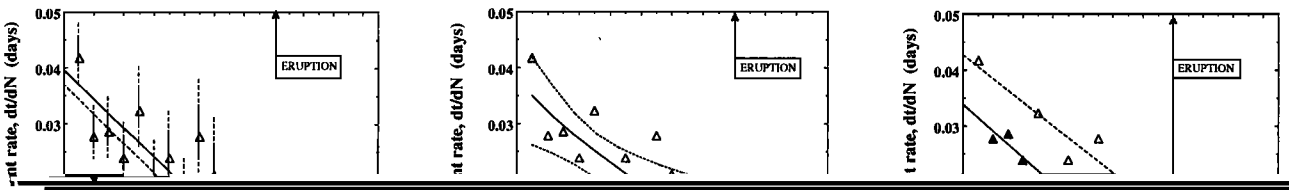
increase exponentially with the length of the crack [*Main et al.*, 1993]. Extrapolating laboratory results to large-scale failure, the bulk rock strain $\varepsilon$ due to a *population* of fractures is expected to

(1) the rate of fracture growth is accelerating, and (2) fracturing is occurring at shorter distances from the monitoring equipment, thereby increasing the proportion of small events (e.g., in a

$$d\varepsilon/dt = (d\varepsilon/dt)_0 \, e^{\lambda(t-t_0)} \, e^{\alpha(\varepsilon-\varepsilon_0)} \qquad (2)$$

where $(d\varepsilon/dt)_0$ is the bulk strain rate at time, $t_0$, $\lambda$ is an empirical

is the increase in seismicity due to accelerated fracture growth, and so the effect of a changing source position must be filtered out.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dome [*Jackson et al.*, this issue] suggests an eruption about

measurement (SSAM) analyses with the Materials Failure

Considered together, eruption windows from different

Mount Pinatubo, in *Fire and Mud: Eruptions and Lahars of*