Abstract: Failure in a quasi-brittle material such as rock or concrete involves microcracking, which generates elastic waves known as acoustic emission (AE). These transient waves propagate through the medium with very small amplitudes and high frequencies, and the AE signals carry information about the source, including location and mechanism. The acoustic emission technique is reviewed, and basic features of a data acquisition system are outlined. Analyses involving count, locations, and source mechanisms will be discussed, and results from laboratory experiments will be highlighted to demonstrate the ability of AE to monitor the evolution of fracture.
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