

## Crack Fusion from the 14 November 2001 Kunlun Mountain Earthquake

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Crack fusion is one of the possible mechanisms for controlling crack growth and cessation, but it has not yet been observed in the earthquake rupture processes due to limitation of data resolution and the relatively small ruptured area. Fortunately, the November 14, 2001, Kunlun Mountain Pass earthquake(KMPE) is large enough for getting insight into this mechanism. The analysis of long-period waveform data suggests that the KMPE had a complicated rupture process, which shows crack fusion. The whole event can be divided into three sub-events in terms of the characteristics of spatio-temporal distribution of slip and slip-rate. The three sub-events started at different times and grew at different locations along the strike direction independently in the beginning time period, and afterwards the ruptures of the three sub-events merged into one another to form the KMPE. This shows a typical crack-fusion mechanism.