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Nota di contenuto	Introduction -- Generalized array imaging on rupture processes of earthquakes: Principle and Theoretical Tests -- Relative back-projection method and its application to the 2008 Wenchuan, China earthquake -- Imaging the rupture process of the 2010 Mw 8.8 Chilean earthquake using the relative back-projection method -- Three sub-event rupture in the 2011 Mw 9.0 Tohoku, Japan earthquake revealed by teleseismic P waves -- Multi-fault rupture and successive triggering during the 2012 Mw 8.6 Sumatra earthquake -- Discussion, conclusions and prospectives.
Sommario/riassunto	This thesis adopts the relative back-projection method to dramatically reduce "swimming" artifacts by identifying the rupture fronts in the time window of a reference station; this led to a faster and more accurate image of the rupture processes of earthquakes. Mitigating the damage caused by earthquakes is one of the primary goals of seismology, and includes saving more people's lives by devising seismological approaches to rapidly analyze an earthquake's rupture process. The back-projection method described in this thesis can make that a reality. .

