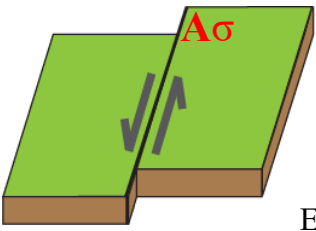


地震活動
= Analysis and Modelling of Seismicity =

Research Purpose: Analyze and model seismicity to assess and reduce the hazard of large earthquakes.
Fundamental Problem: Statistical modelling of seismicity alone is not able to provide forecasts of large, potentially destructive earthquakes. We therefore need to construct our forecast models based on physical/deterministic laws that relate seismicity with fault processes.

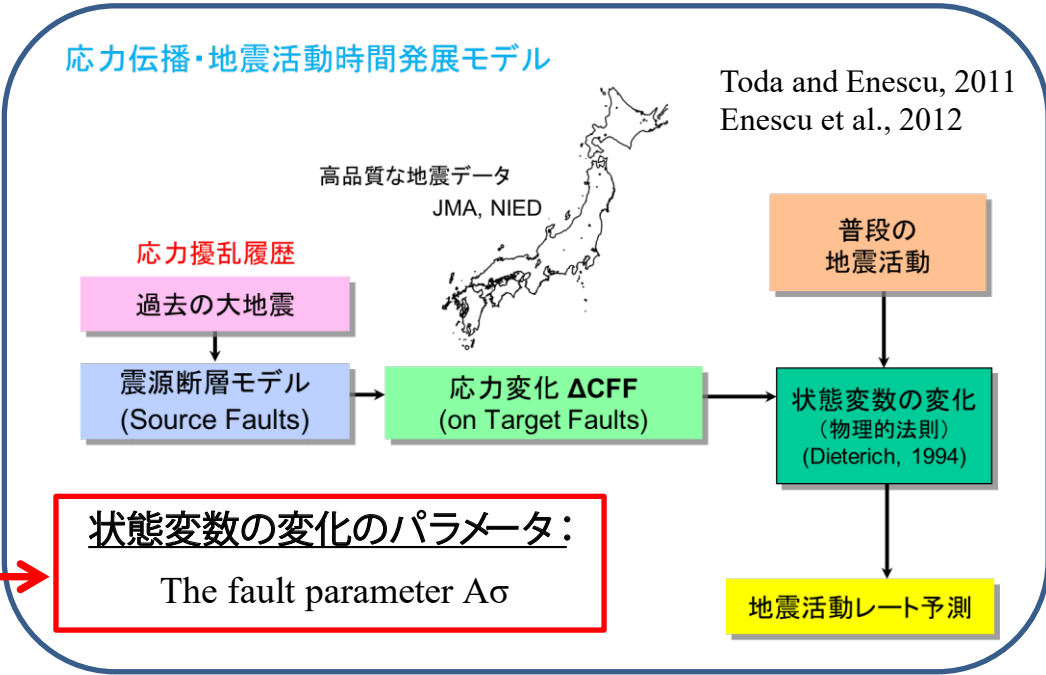


Determine the Fault Parameter $A\sigma$!

Enescu et al., 2007; Enescu et al., 2009

High-pass filtering of waveform data allows detection of small aftershocks → Modelling using Physical Laws

• Physics-based earthquake forecasting



Major scientific contributions:

- *By systematic modelling of aftershock sequences we provided for the first time a relationship between stress on faults and early aftershocks.*
- *We have constructed the first physics-based earthquake forecast model for Japan.*

 I have established collaborations with top Earth scientists from Japan, US and Europe and published more than 50 papers in peer-reviewed journals, including top ones like "Nature Geoscience" and "Proceedings of the National Academy of Sciences (PNAS)".