



# **Mechanism and mitigation of earth fissure in China**

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# Background

**A geo-hazard phenomenon of rupture in the surface soil.**

**A world-wide geological disaster, especially in the USA and China.**



**Ethiopian**



**USA**



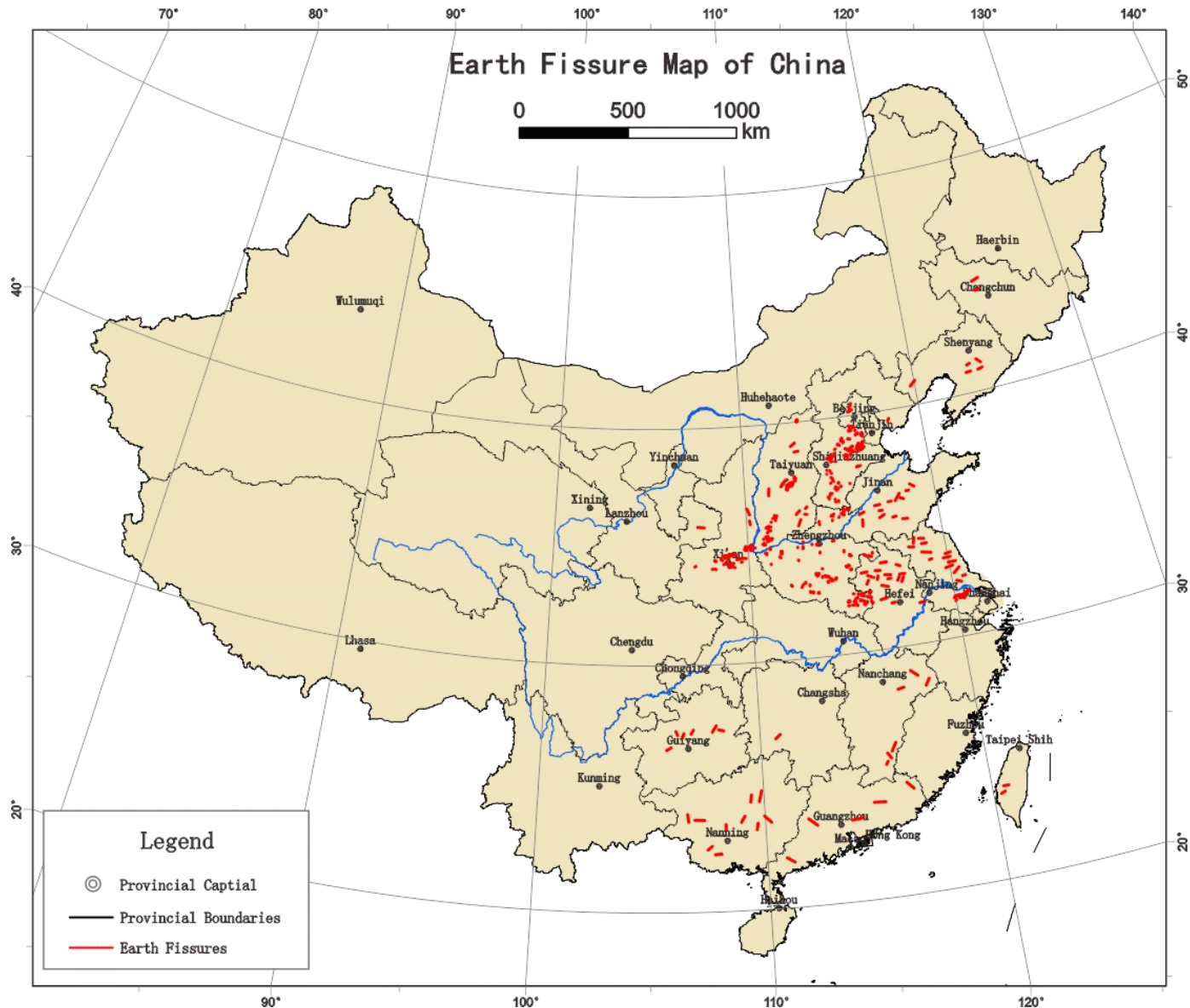
**Saudi Arabia**



**Mexico**

# Background

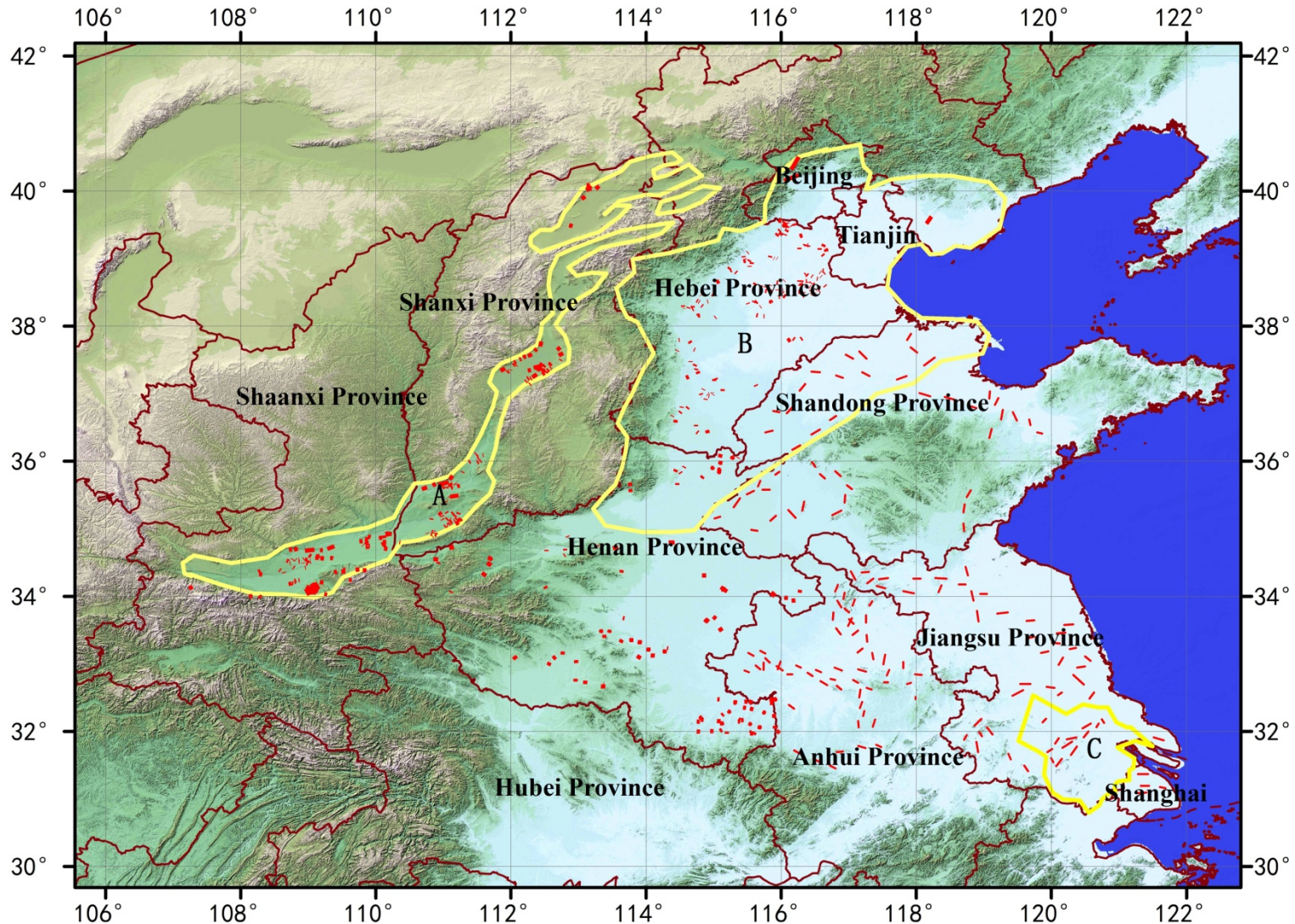
## The main distribution of earth fissures in China





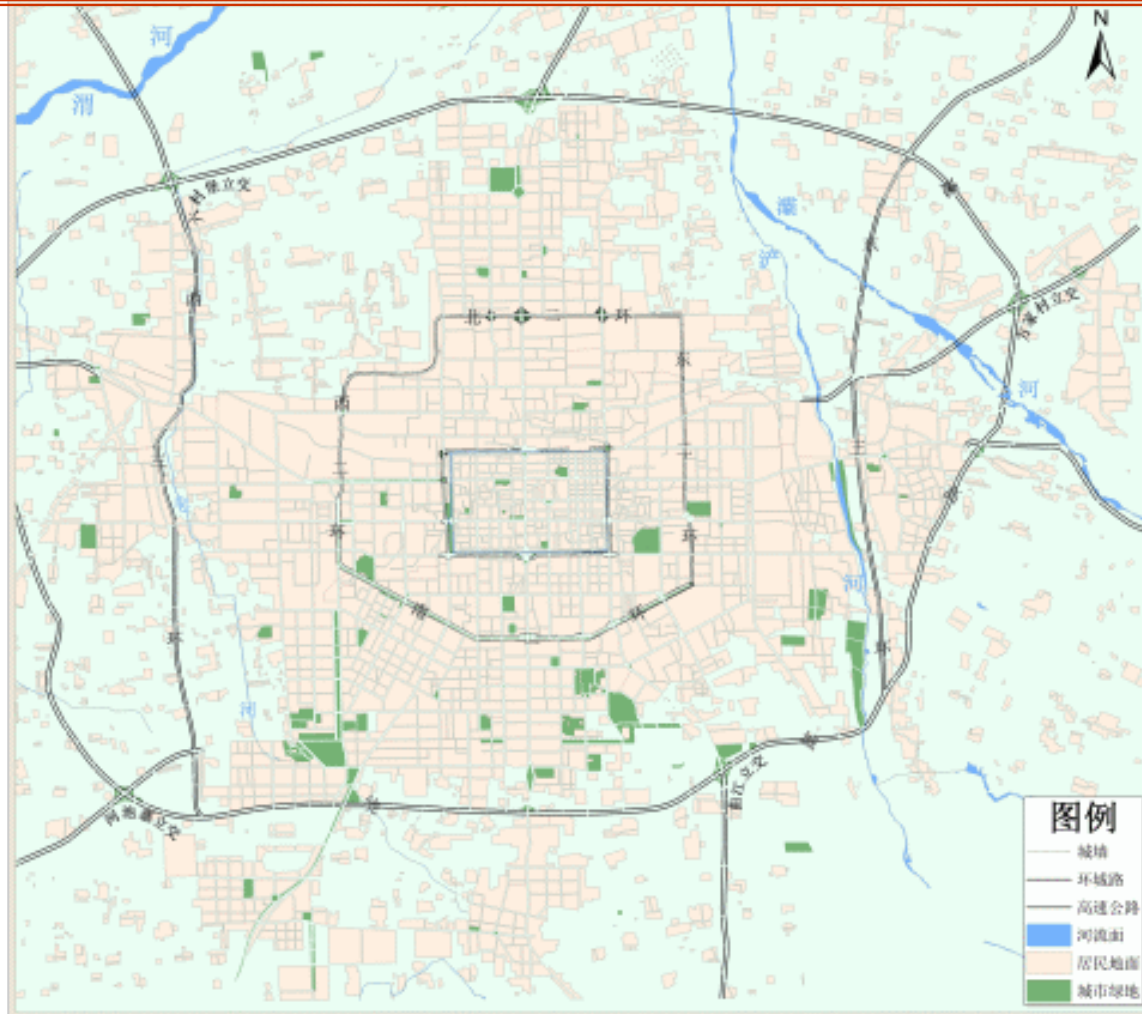
# Background

**Earth fissures are main distribution in North China Area, especially in Fenwei Basin.**



# Background

With similar directions as NEE and approximately, 14 earth fissures are dividing the city. These fissures cover an area of more than 270km<sup>2</sup> and extend more than 170km in length.





# Background

**Great economic loss caused by ground fissures up to tens of billions Yuan in China!**



**Qi County in Shanxi Province**

**Qingxu County in Shanxi Province**



**Kouzhen Village in Shaanxi Province**

**Beiqijia Town in Beijing**



# Research idea and method

Investigation、 Exploration、 Monitoring、 Test、 Physical simulation、 Numerical simulation、 Theoretical analysis、 Prevent practice

## Characteristics

- Plane distribution
- Profile structure
- Movement feature
- Activity characteristic

Natural laws

## Mechanism

- Areal geology
- Tectonic stress
- Active fault
- Human activities

Formation mechanics

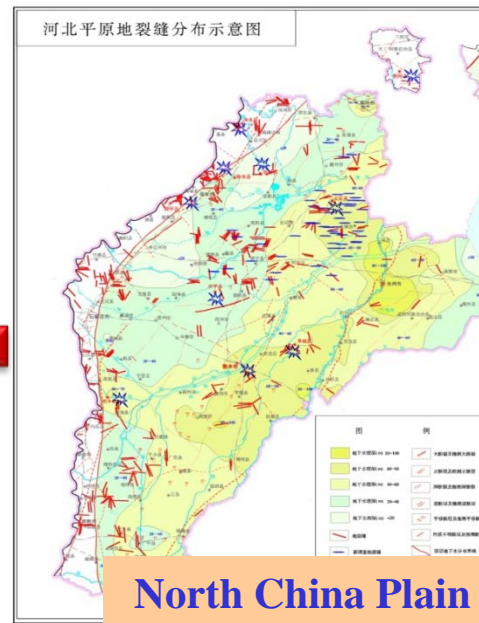
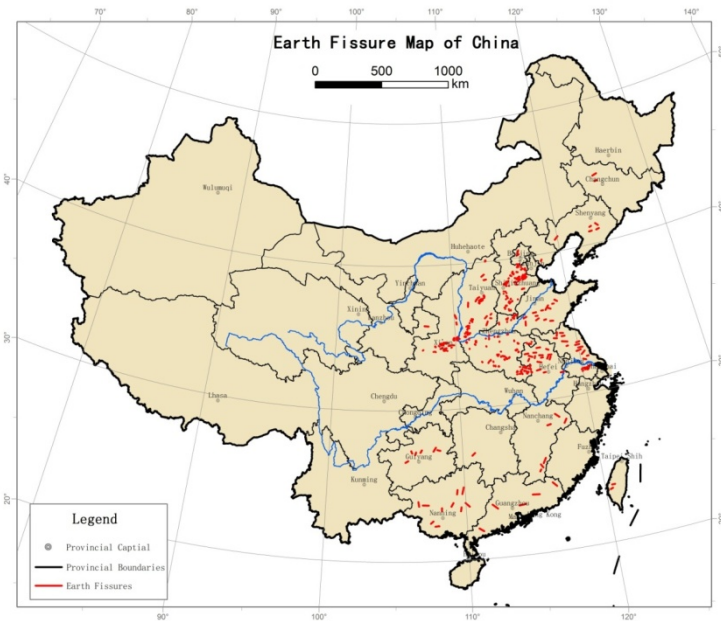
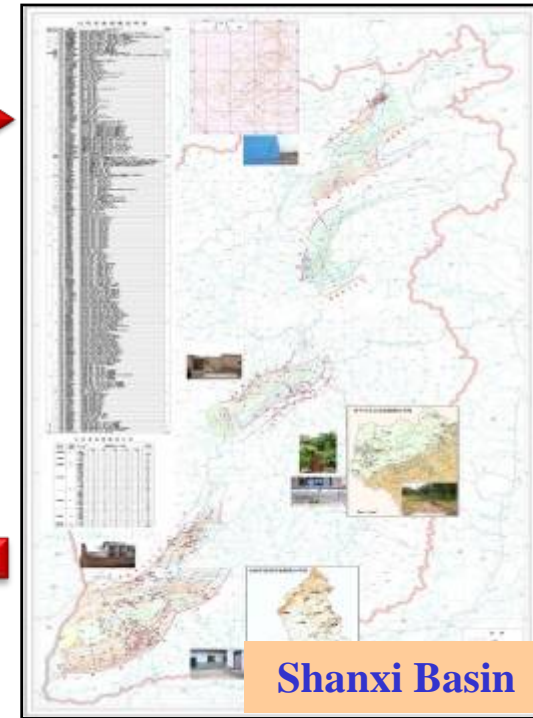
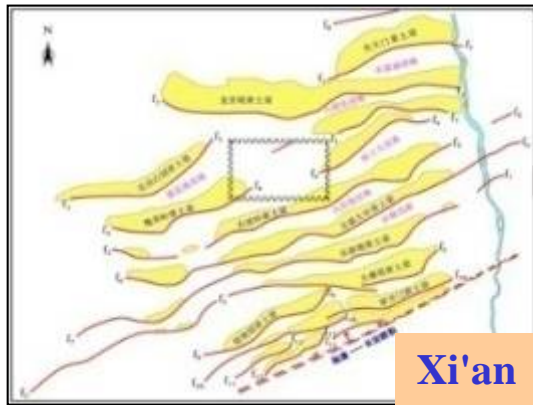
## Mitigation

- Disaster-causing rule
- Metro
- High-speed rail
- Urban infrastructure

Preventive measures

Mechanism and mitigation of earth fissure

# Background



**Earth fissure research trilogy of Xi'an, Fenwei Basin and North China Plain has been completed.**