

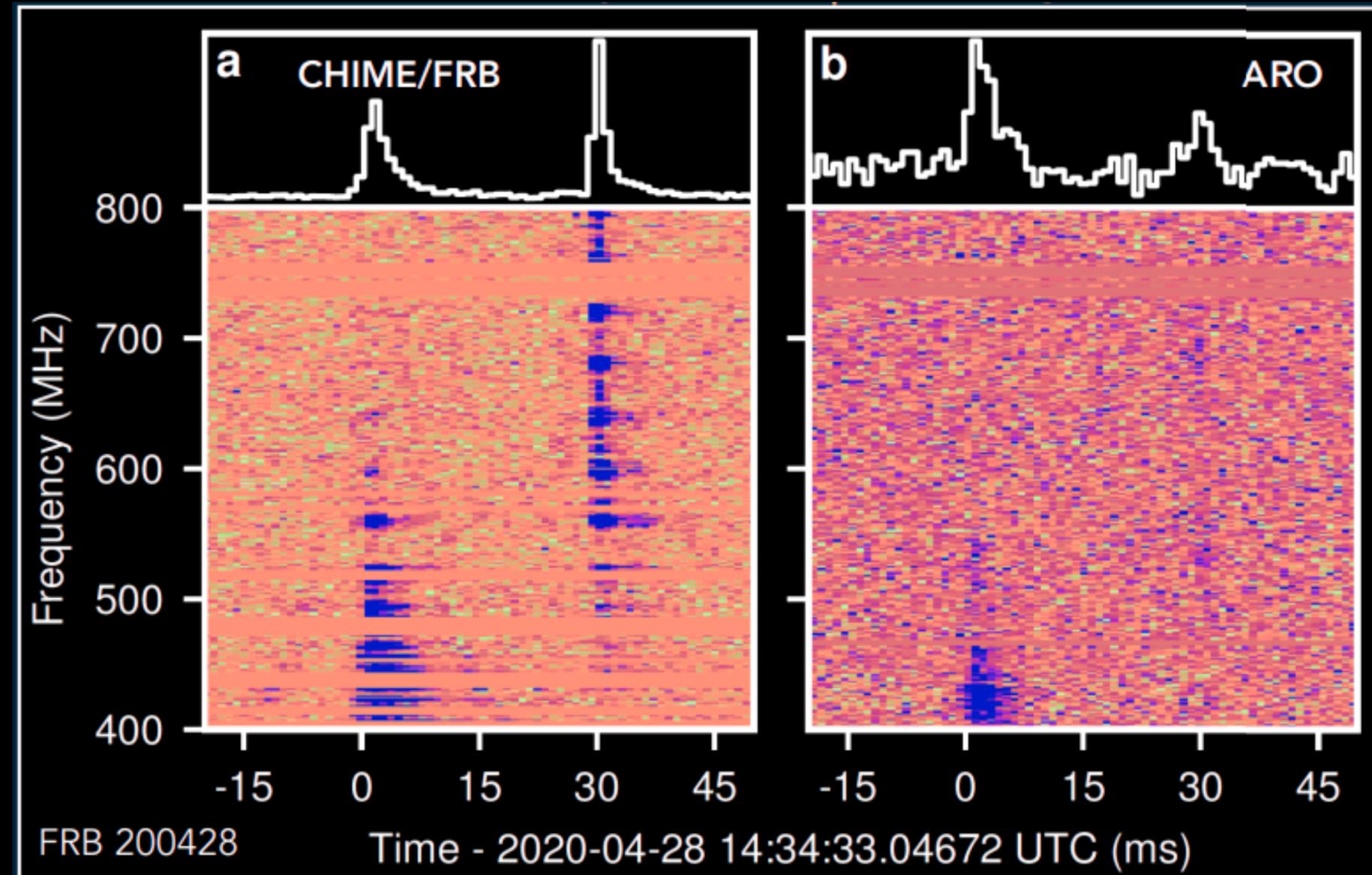
**FAST RADIO BURST
GENERATION BY
RELATIVISTIC
MAGNETIZED SHOCKS
IN MAGNETAR
MAGNETOSPHERES**

Student: Bilosi Gaia

Supervisor: Vanthieghem Arno

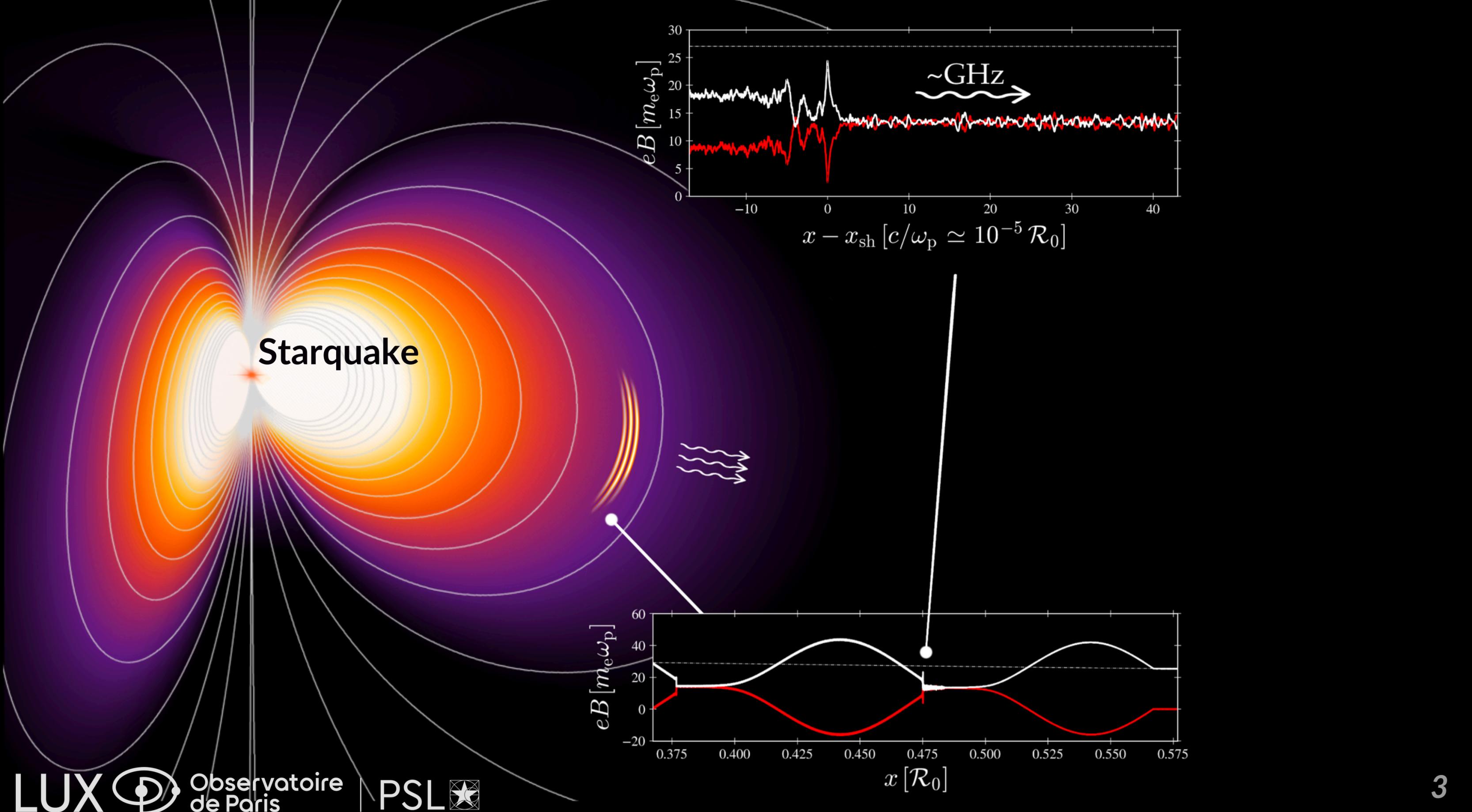
FAST RADIO BURSTS

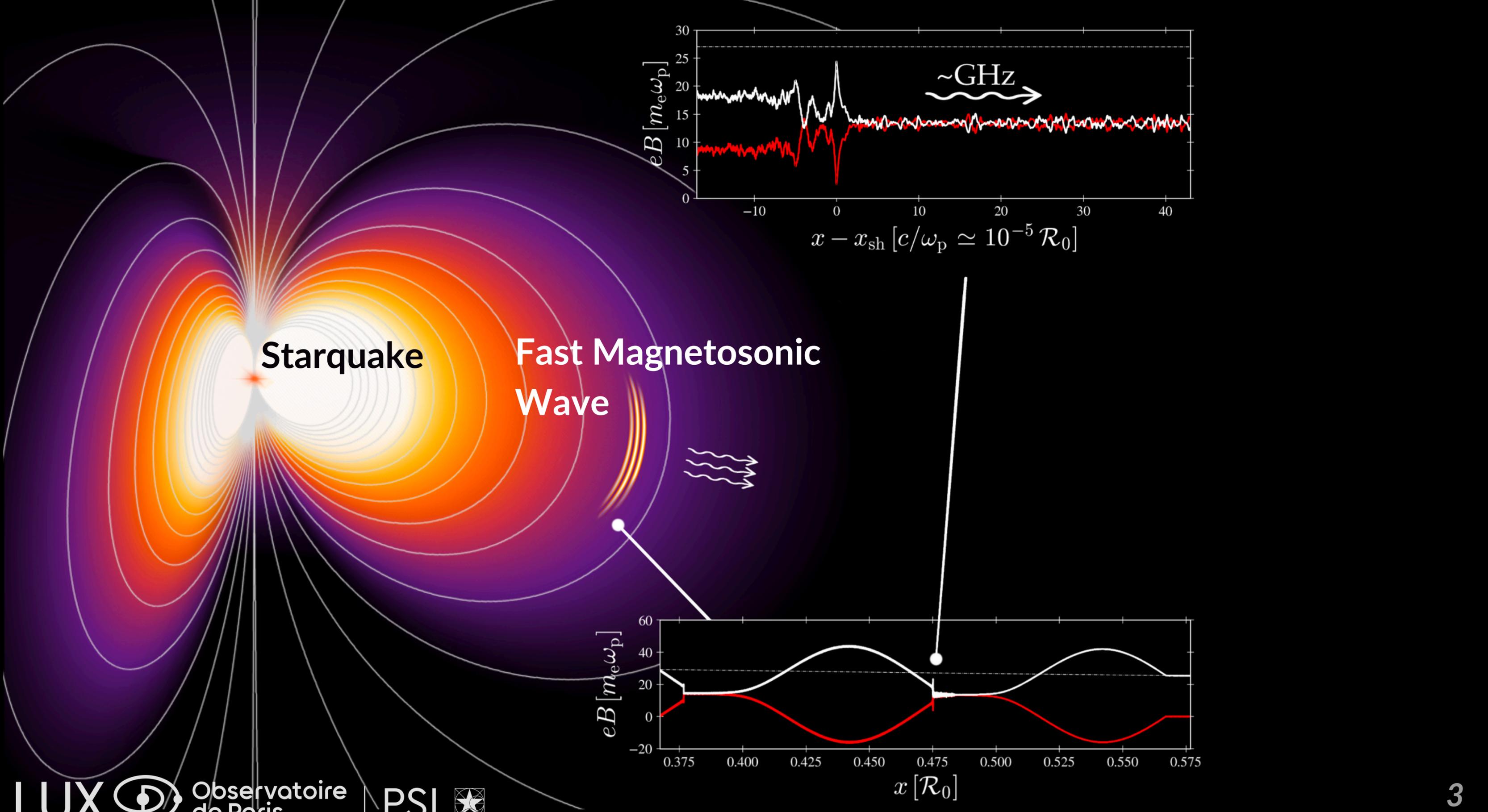
- Bright flashes:
1 – 100 Jy
- Short duration:
from $\sim 10 \mu\text{s}$ to $\sim 10 \text{ ms}$
- Radio band (mostly linearly polarized):
0.1 to 8 GHz
- Extragalactic

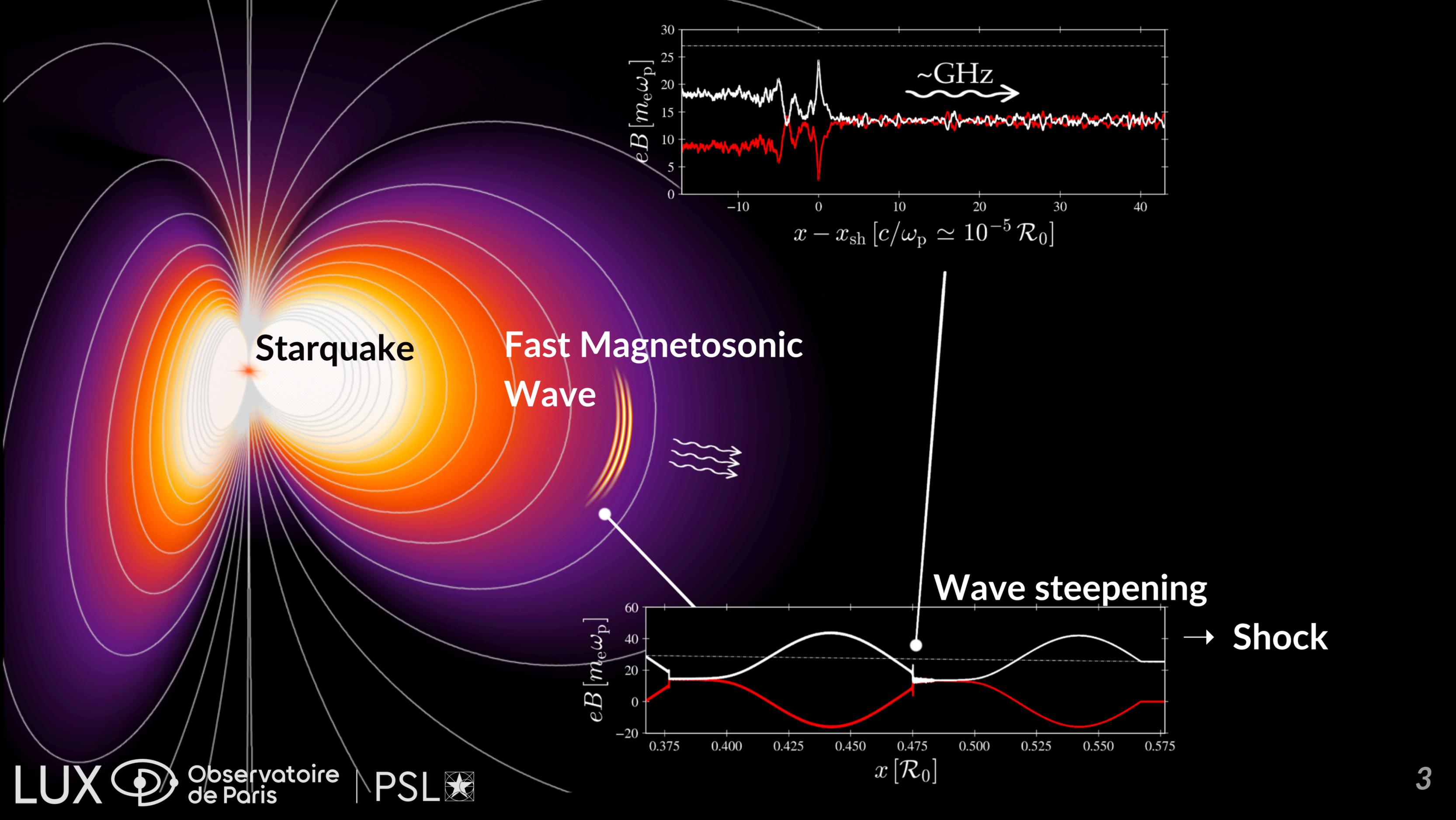


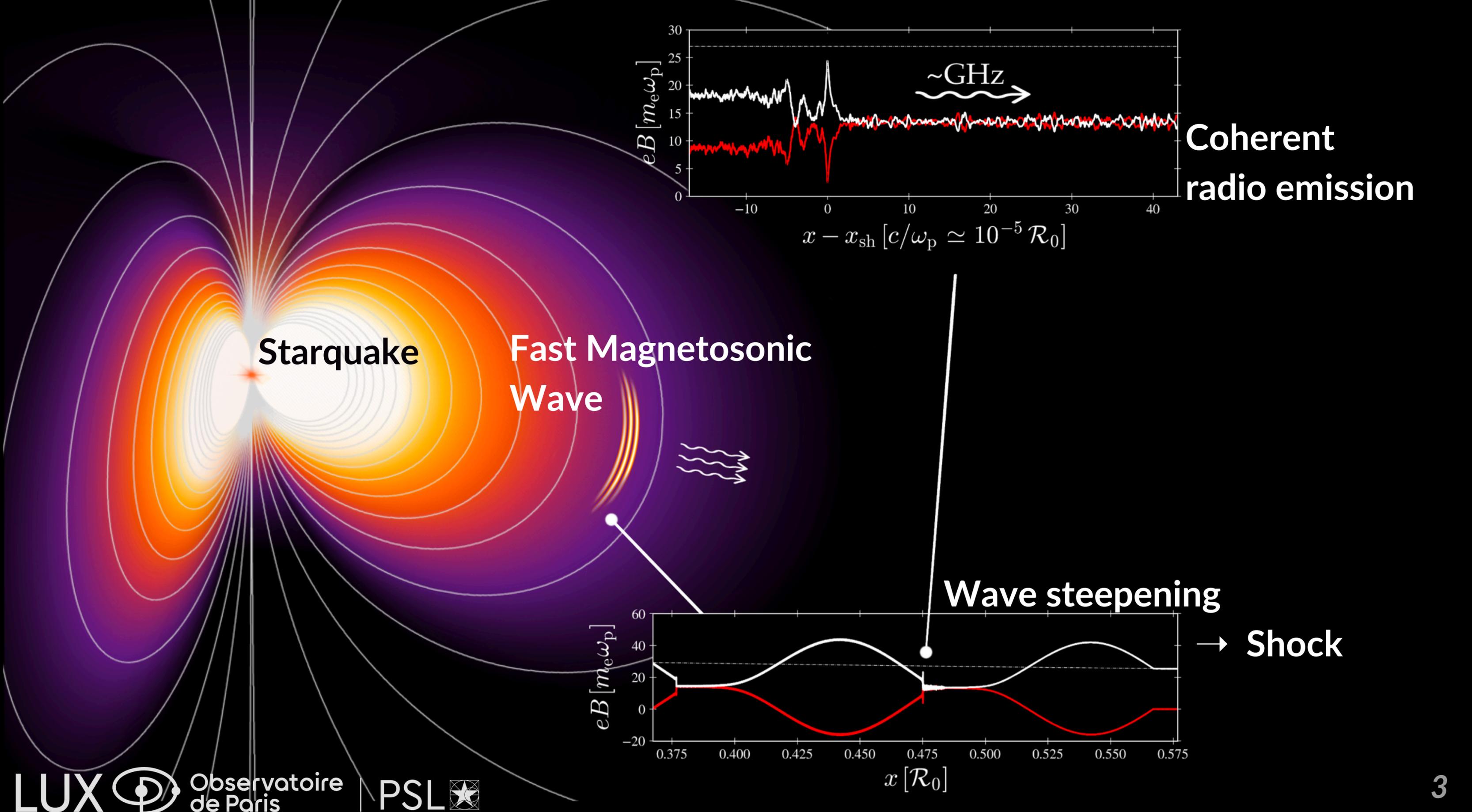
What is their progenitor?

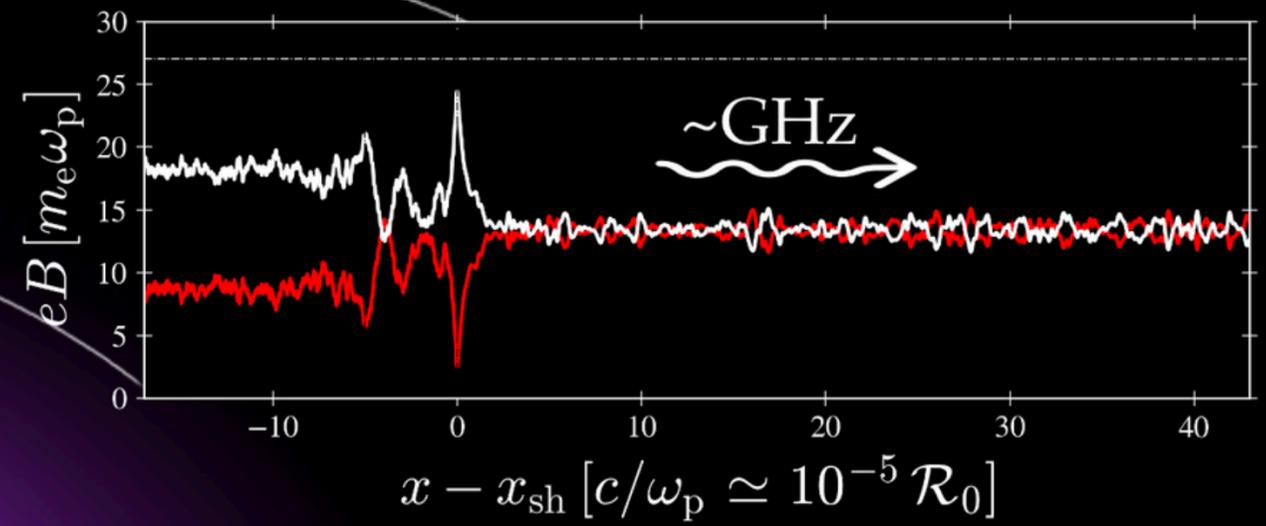
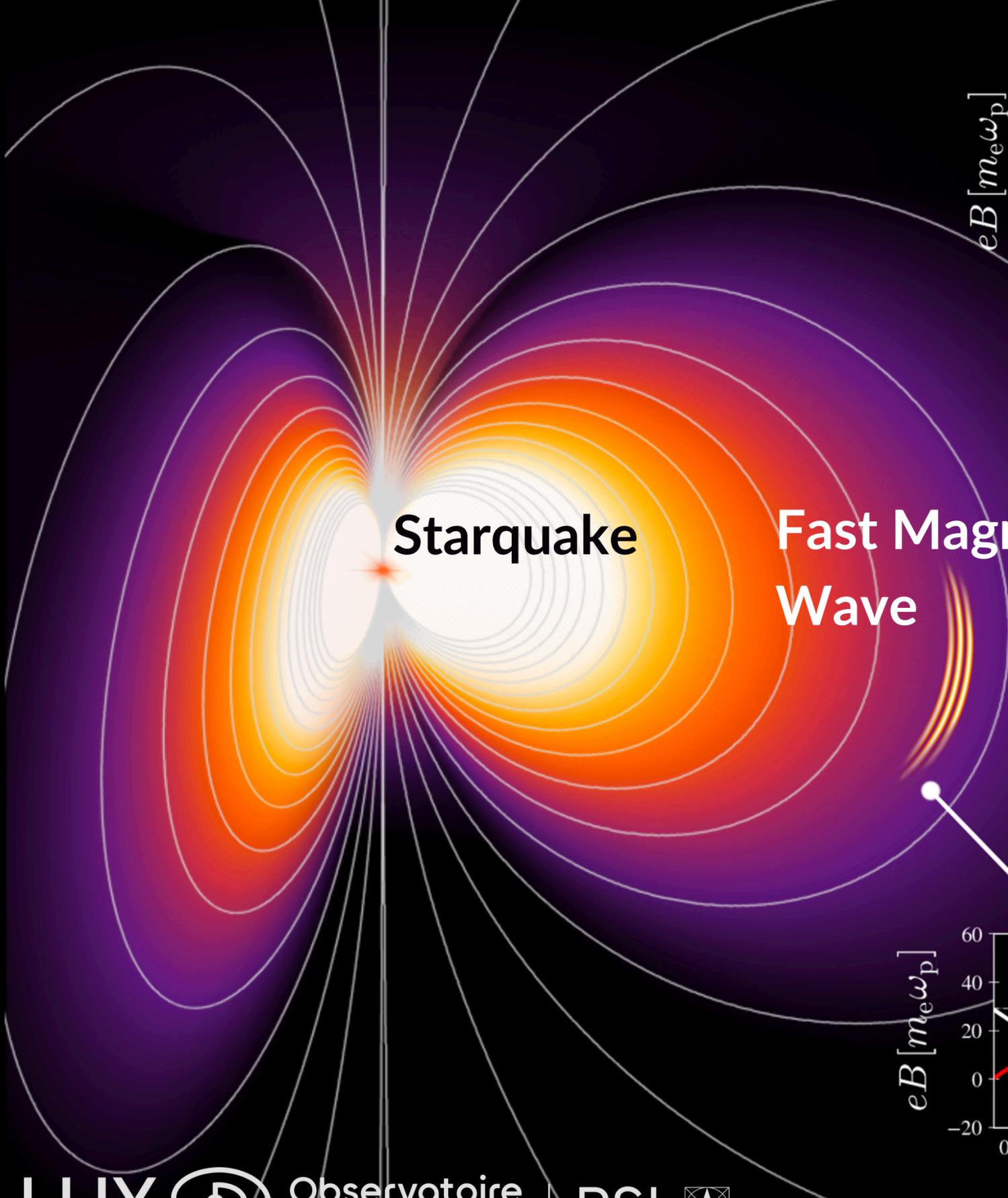
CHIME (2020)











**Coherent
radio emission**

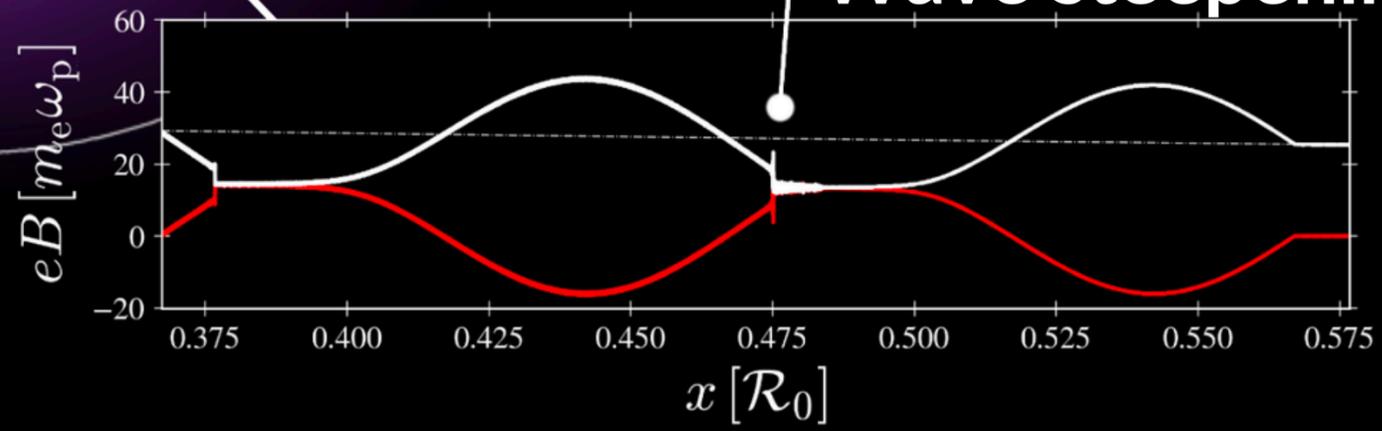
**Fast Magnetosonic
Wave**

**PhD : Nonlinear waves
in strongly magnetized environments?
Theory & simulations**



**An open-source code for high-energy
astrophysics**

Wave steepening



Shock