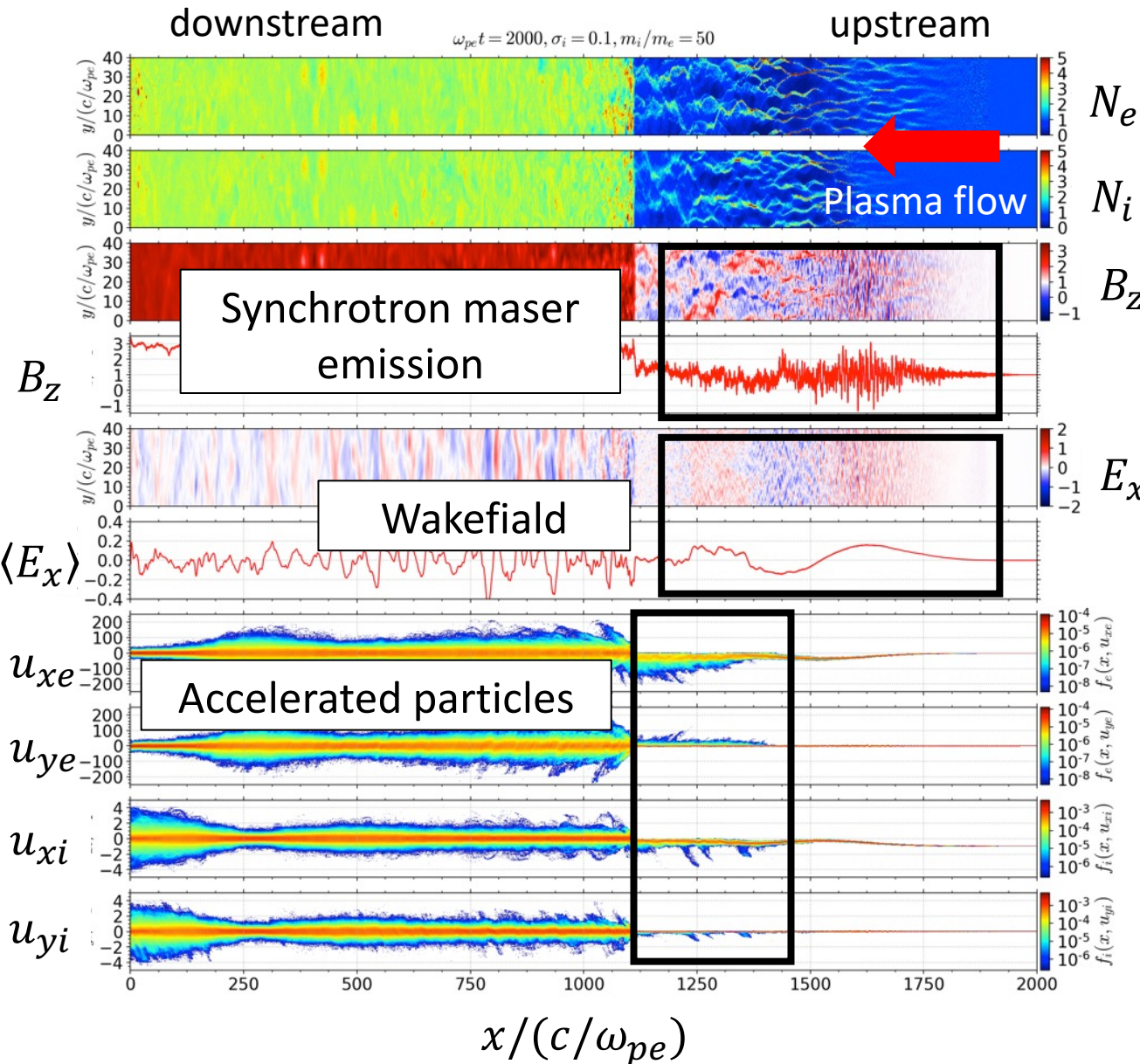


Particle-in-Cell Simulations of Synchrotron Maser Emission and Associated Particle Acceleration in Relativistic Shocks



- ✓ Synchrotron maser instability induces intense EM waves
 - ✓ electrostatic wave (=wakefield) is generated by the stimulated Raman scattering
 - ✓ Nonthermal ions and electrons are generated in the upstream
 - ✓ Maximum energy:
 - $\gamma_{max,e} \sim \gamma_1^3$
 - $\gamma_{max,i} \sim \left(1 + \frac{m_e}{m_i} \gamma_1\right) \gamma_1^2$
- γ_1 : upstream bulk Lorentz factor

