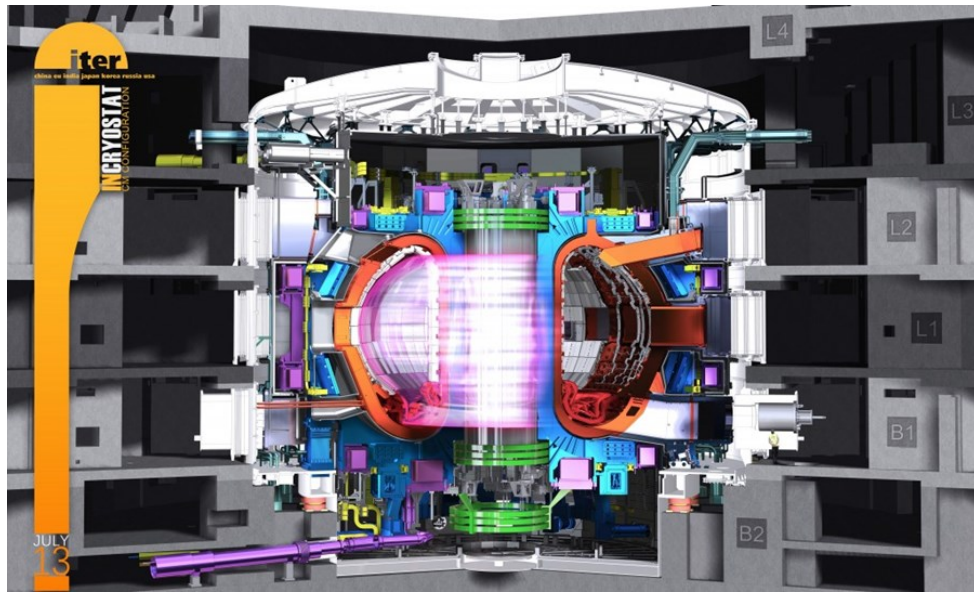
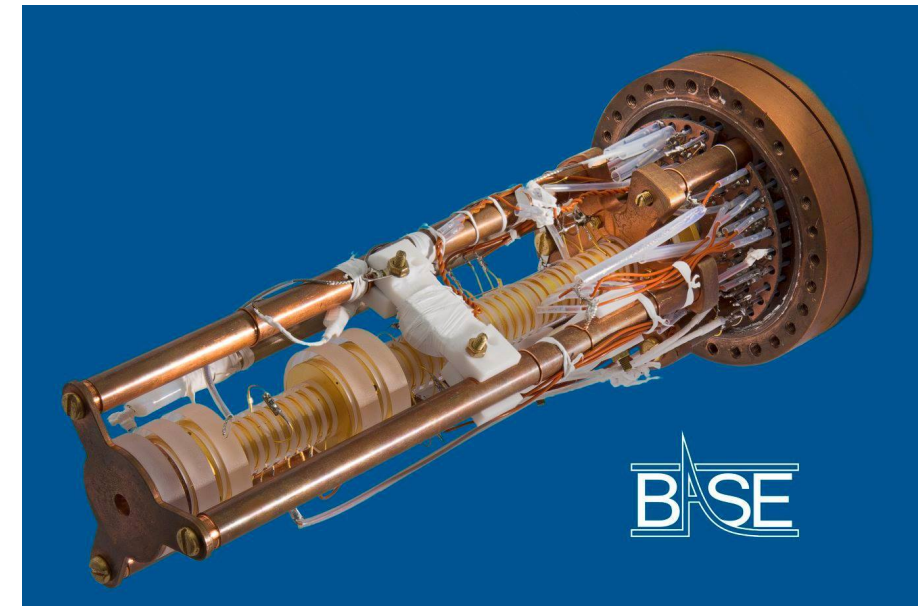


ALPINE: A set of performance portable plasma physics particle-in-cell mini-apps for exascale

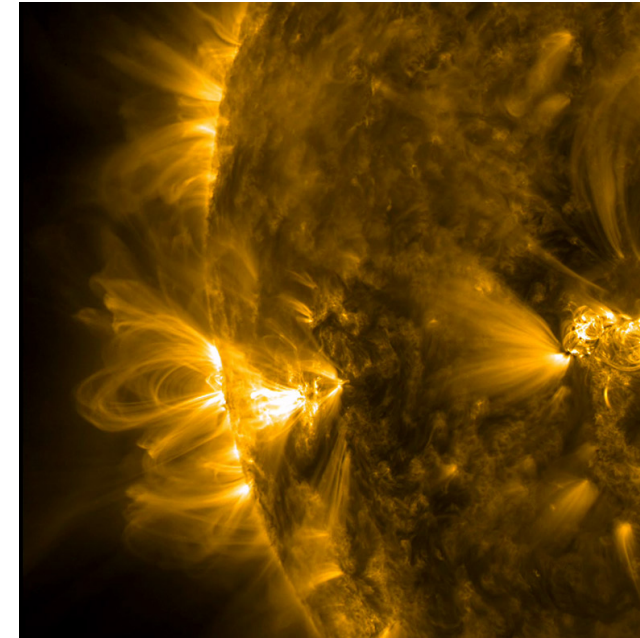
Kinetic plasma simulations



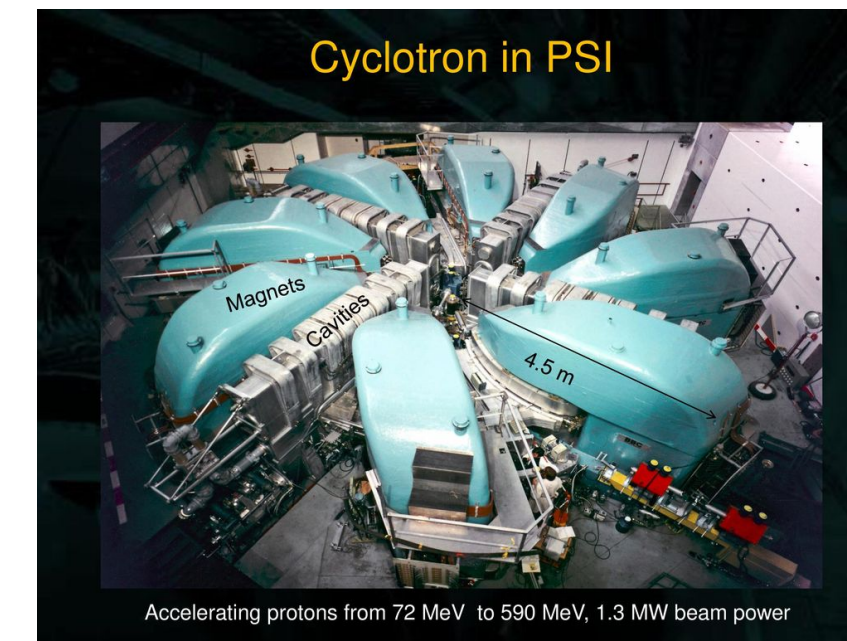
Source: iter.org



Source: CERN

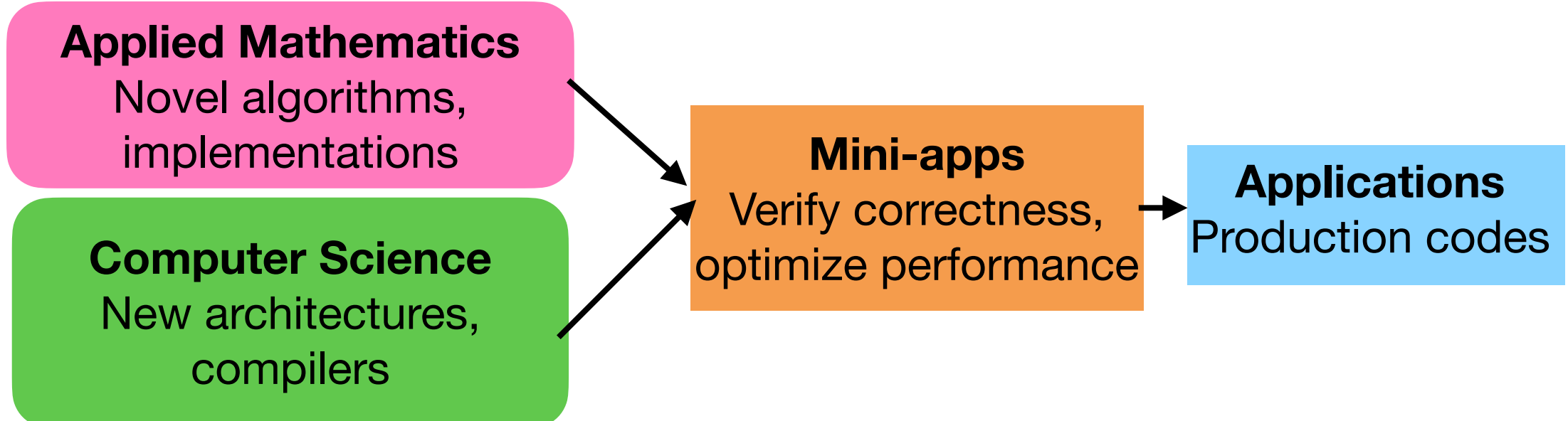
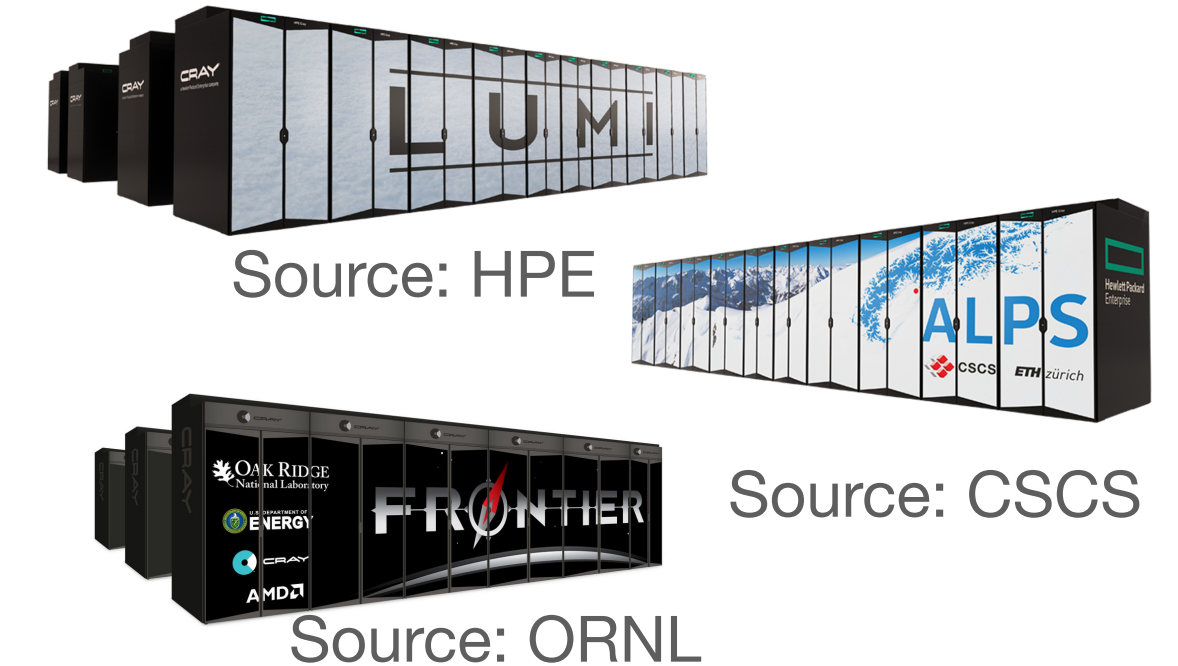


Source: NASA



Source: PSI

Heterogeneous Exascale Architectures



- Mini-apps in ALPINE so far**
- Landau damping
 - Penning trap
 - Two-stream/Bump-on-tail Instability

- Considered Architectures so far**
- Piz Daint (#20 in Top500)
 - Cori KNL (#37 in Top500)
 - Perlmutter (#5 in Top500)
 - Summit (#2 in Top500)

Linear Landau damping: Strong Scaling study

