

Algorithm Issues

- **Scalability**
 - Category 2
 - All systems need scalable algorithms, but exascale will depend on new work beyond the current petascale levels (over 100k cores)
- **Fault tolerance/resilience**
 - Category 1-2
 - Predicted fault rates suggest sub-exascale systems will have significantly lower rates of faults wrt exascale
- **Conforming to architectural requirements**
 - Category 2-3
 - Need to adapt to building-block hardware. Assuming that “Petascale rack” is a building block, so not unique to exascale.
 - “Exascale accelerators” may be important; that piece is category 1
- **New areas/uses of algorithms**
 - Category 1-3
 - These are exploiting new architecture features (category 2-3) and Exascale capabilities
- **Must be focused on application requirements**
- **Red** for critical for Exascale