

# Addressing heterogeneity at System-Level

#### **Cluster-Booster Architecture:**

- General-purpose **Cluster** + Many-core **Booster** •
- Run applications on best suited hardware





### **DEEP Prototype**

## System SW Global MPI + task-based parallel offload

## I/O and resiliency: DEEP-ER

- **KNL** Booster nodes
- NVM-based memory hierarchy
- Software enhanced with fast, highly scalable I/O and resiliency systems



Brain simulation



CFD & combustion

















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## **Driven by Co-Design:** Diverse, real-world HPC applications











