

***Abstract:***

As we head towards the exa-scale cliff, there are at least two schools of thought. One is the attack of the killer-nano's. The other is that of having both nano's along with larger memory footprint elements of the node. We call them hybrid nodes. One of these revived systems was RoadRunner. It was a forerunner of things to come. We will examine some of the potential technologies that will allow us to advance beyond the killer-nano's. Co-design will be something we will have to embrace, no matter which path we take. Which path will make it "less" painful and more productive? What might be some of the technologies that will allow us to get to an exa-scale that will not require 50-100MW