

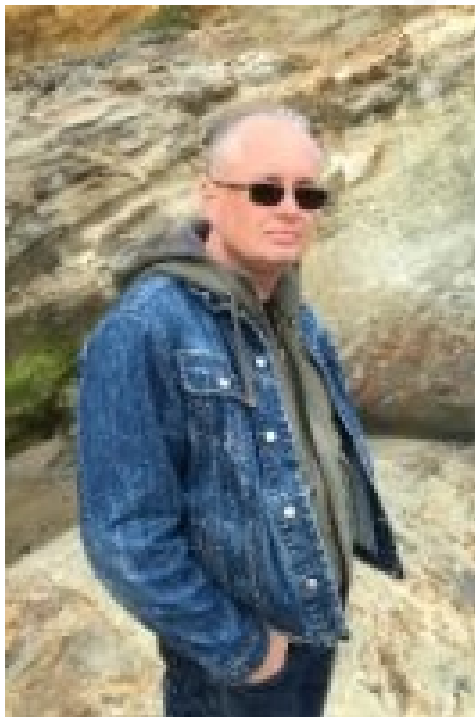
HPC Dirt Farming: Or How I Learned to Stop Worrying and Love Cosmic Death Rays from Outer Space

Sean Blanchard

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Friday, Dec. 1 from 12:00-12:50pm in T&B 303

Abstract: For 30 years engineers have studied the effects particles from cosmic ray showers have on electronic and computer components in aviation and space applications. These systems are small but are used at high altitudes which expose them to relatively high fluxes of particles. High Performance Computers operate at much lower altitudes, but due to their large size show incidence rates comparable to satellites. In this talk I will cover Los Alamos National Laboratory’s history of misbehaving supercomputers, and our current efforts to characterize the susceptibility of our newest supercomputer Trinity to neutrons from cosmic rays.



Biography: Sean Blanchard has been designing, building, running and debugging some of the world’s most powerful supercomputers since 1999. In that time he has worked on nearly every software and hardware component used in a modern HPC system. His current work is focused on studying radiation effects on modern HPC hardware, replacing UEFI with something that works better for HPC systems, building scalable system configuration and management software for Exascale class machines, and using machine learning techniques to extract bad behaviors occurring on running HPC systems before they negatively impact users. He has MS degrees in both Electrical Engineering and Physics from New Mexico State University.