Real-Time Simulation of Actual Systems for Live Continuous Research

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Abstract

It is stated that one is living in the age of information but other argue that it is in fact the age of measurement. The information has always been there. Today on is able to measure the surface temperatures of planets on distance solar systems. The process and minerals industry need along aside their actual in-situ process conditions (eg melting of charge in a smelter or progressing value dissolution during acid leaching in a Pachucas), a simulated real-time version of the actual in-situ environmental conditions. This allows the collection of real-time samples of the virtual system and experiment with in order to learn how the simulated changes impact the actual outcome. A mine or a minerals processing plant should be able to conduct many hundred of tests per day on the sampled data in order to effect future outcome. High performance computers can make live continuous research of a virtual system possible with the added benefit that multiple scenarios can be researched simultaneously, giving opportunity to operations managers and researchers the ability to forecast different outcomes that suit their respective needs. This type of continuous research allows for optimisation of different part of the mine or plant. This paper sheds light on such live continuous research possibility and opportunity.

Keyword:

Real-time simulation; research; continuous, process and minerals industry, high performance computers