

WWW, Grid, Neural Computing, Spin-Offs from High Energy Physics

Tuesday, 11 July 2006 10:45 (1h 45m)

The quest for the very fundamental mysteries of nature by exploring the smallest scales and highest energies at particle colliders requires a huge technological and intellectual effort.

While many people think this is a purely intellectual exercise for some crazy super-brains without any impact on society, the spin-offs from High Energy Physics research actually has and will have a number of consequences also for non-scientists.

The most famous example is the World Wide Web which has its roots at CERN. It clearly has revolutionized nearly everybody's life. The huge amount of data collected at the next generation of accelerator experiments led to the development of grid technology, i.e. computing power and storage "out of the plug" in a world wide grid of computer centres.

Accelerator and detector development has led to progress in medical imaging and radiation therapy.

Very powerful regularised neural network algorithms developed for reconstruction and statistical analysis of high energy physics experiments have been proven to be extremely good prediction and risk assessment methods. These now have first applications in banks, insurances, car and steel industry as well as trading companies.

The lecture describes the major ideas of some important spin-offs and their consequences for society. Finally career possibilities for physicists outside public research are described.

Primary author: FEINDT, Michael (Institut fuer Experimentelle Kernphysik)

Session Classification: Tuesday morning