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Gentoo Prefix as a physics software manager

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In big physics experiments, as simulation, reconstruction and analysis become more sophisticated, scientific reproducibility is not a trivial task. Software is one of the biggest challenges. Modularity is a common sense of software engineering to facilitate quality and reusability of code. However, that often introduces nested dependencies not obvious for physicists to work with. Package manager is the widely practised solution to organize dependencies systematically.

Portage from Gentoo Linux is both robust and flexible, and is highly regarded by the free operating system community. In form of Gentoo Prefix, portage can be deployed by a normal user into a directory prefix, on a workstation, cloud or supercomputing node. Software is described by its build recipes along with dependency relations. Real world use cases of Gentoo Prefix in neutrino and dark matter experiments will be demonstrated, to show how physicists could benefit from existing tools of proven superiority to guarantee reproducibility in simulation, reconstruction and analysis of big physics experiments.

Consider for promotion

Yes

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