21st International Conference on Computing in High Energy and Nuclear Physics **CHEP2015** Okinawa Japan: April 13 - 17, 2015

Contribution ID: **239** Type: **poster presentation**

BESIII production with distributed computing

Distributed computing is necessary nowadays for high energy physics experiments to organize heterogeneous computing resources all over the world to process enormous amounts of data.
The BESIII experiment in China, which has aggregated about 3 PB of data over the last 5 years, has established its own distributed computing system, based on DIRAC, as a supplement to local clusters, collecting cluster, grid, desktop and cloud resources from collaborating member institutes around the world. The system consists of workload management and data management to deal with the BESIII Monte Carlo production workflow in a distributed environment. Random trigger data are distributed with a dataset-based data transfer system at a speed of 10 TB/day to enable processing of the whole Monte Carlo simulation and reconstruction workflow at remote sites. File and metadata management tools and a job submission frontend have been developed to provide a virtual layer for BESIII physicists to use distributed resources.
The BESIII distributed computing system, which is composed of more than 3000 CPU cores across 10 sites, with about 400TB storage, has been in production since the end of 2012. Three large-scale production tasks have been completed, with more than 150,000 jobs completed successfully. Measures have been taken to cope with lack of grid experience and low manpower at grid sites, and in particular, monitoring has been strengthened to deal with these issues. Moreover, the paper shows our experience of integrating various kinds of private cloud resources in a dynamic way to greatly ease maintenance of sites. Our efforts to extend the platform to more new high energy experiments in China are also discussed.

Primary author: Dr ZHANG, Xiaomei (Institute of High Energy Physics)

Co-authors: Dr YAN, Tian (Institute of High Energy Physics); Dr XIANGHU, Zhao (Institute of High Energy Physics)

Presenter: Dr ZHANG, Xiaomei (Institute of High Energy Physics)

Track Classification: Track5: Computing activities and Computing models