

Dipartimento Di Fisica, CDF
INFN - Bologna, 40127, Italy
jha@bo.infn.it

March 11, 2009

Dept. of Physics and Astronomy
University of Victoria
PO Box 3055 STN
Victoria, BC, CANADA V8W 3P6

Dear Ms. Lorraine Charron,

This is the mail in reference to the advertisement for the post “Postdoctoral Fellow position to work on the ATLAS experiment at the CERN LHC”.

I did my thesis on CMS experiment in 2007. In CMS, I worked on performance of jet algorithms in comparison to Seedless Infrared-Safe Cone (SIScone). We proposed that SIScone be adopted as the default cone based jet clustering algorithm for CMS (**Published in CMS AN 2008/02**). Under search for new phenomena, I studied CMS sensitivity to quark contact interactions in the dijet final state using the new CMS software framework for simulation and reconstruction (CMSSW). My analysis demonstrates that the present Tevatron limit on quark compositeness will be crossed only with 10 pb^{-1} of data (**Published in J. Phys. G36:015004,2009**). I conducted the Simulation Workshop for CMS 16th-24th Feb., 2004, held at the Center for Detector & Related Software Technology, University of Delhi, India. The participants included post-doctoral fellows, graduate students, system managers and software experts from Tata Institute of Fundamental Research (TIFR) Mumbai, Panjab University & Delhi University. The participants learnt the installation of CMS software and their use in physics analysis. I was the system administrator of Delhi group during my graduation days.

After my graduation, I got an opportunity to work on real data for CDF experiment. Presently a post doctoral fellow at INFN Bologna, Italy working for CDF experiment. I am using the ratio of x-section of dijets to search for quark compositeness at Tevatron energy (**Abstract accepted to APS 2009, Denver, USA**). Our group has considerable experience in extracting physics from minimum bias data. I am also evaluating the contribution of heavy flavor hadrons especially from bottom and charm quarks in the minimum bias data. The present HF tagger algorithm is not suited for minimum bias data due to presence of very low P_T particles. I re-wrote the HF tagger algorithm for our case and found that the results are encouraging. This analysis is under progress now. Under service work to CDF collaboration, we proposed a new data transfer model that uses SRMs as local caches for remote Monte Carlo production sites, interfaces them with SAM, the experiment data catalog, and finally realizes the file movement exploiting the features provided by the catalog data transfer layer (**Abstract accepted to CHEP 2009, Prague**).

I feel that I am well qualified to make an effective and useful contribution to the “Postdoctoral Fellow position working on the ATLAS experiment at the CERN LHC”. Please contact me if you require any further information.

Yours Faithfully,

Dr. Manoj Kumar Jha

encl: My curriculum vitae.
List of publications.