

## World Congress on QUANTUM PHYSICS

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**Cosmography in  $f(Q)$  gravity****Sanjay Mandal***Birla Institute of Technology & Science Pilani, India*

Cosmography is an ideal tool to investigate the cosmic expansion history of the Universe in a model-independent way. The equations of motion in modified theories of gravity are usually very complicated; cosmography may select practical models without imposing arbitrary choices a priori. We use the model-independent way to derive  $f(z)$  and its derivatives up to fourth order in terms of measurable cosmographic parameters. We then fit those functions into the luminosity distance directly. We perform the MCMC analysis by considering three different sets of cosmographic functions. Using the largest supernovae Ia Pantheon sample, we derive the constraints on the Hubble constant  $H_0$  and the cosmographic functions, and find that the former two terms in Taylor expansion of luminosity distance work dominantly in  $f(Q)$  gravity.

**Biography**

Sanjay Mandal has completed his PhD from Birla Institute of Technology and Science, He received many academic awards like two-time gold medals in Mathematics (B.Sc. and M.Sc.), Institute of Mathematics and Applications (IMA) scholarship in 2016, University Rank Holder (URH-UGC) fellowship from 2016 to 2018 for his Master's degree, DST Inspire Fellowship, Govt. of India from 2019-2014 for Ph.D., Best Paper Award (in International conference) in 2022. In his three and half years of research career, he has published 23 research articles in various renowned international journals. Being a researcher, he became a lifetime membership of scientific societies like IAGRG, India, and the Tensor society, India. He has presented research papers at several national and international conferences (such as Brazil, South Africa, and Taiwan).