Contribution ID: **25** Type: **not specified**

Spherical cosmological models: an alternative cosmology

Wednesday 9 December 2020 16:50 (20 minutes)

The properties of universes are explored that are entirely in the interior of black holes in another universe, a 'mother universe'. It is argued that these models offer a paradigm that may shed a new light on old cosmological problems. The geometry of such a universe is discussed including how it would appear to the observer. The Hubble parameter is direction dependent, but it is argued that the interpretation of any such dependence will be hard to separate from local inhomogeneities. The models do not originate from a big bang, but rather from an initial collapse and subsequent infall, that started probably a very long time ago, presumably much earlier than the accepted age of the universe. The relation to the concordance model is discussed and it is shown that a lot of the existing theory can be taken over into the proposed models. The universe has an edge, which is an ordinary sphere in 3 dimensions. That sphere acts as a gravitational mirror as seen from inside the universe, but it does not mirror redshift. The same object can thus be seen in direct sight and in reflection, although with different redshifts, different ages and different aspect angles. The models do not need dark energy, but they need dark matter, of course. Since the models are closed and neutrino's are nowadays believed to have mass, neutrino's can be reconsidered as candidates for the dark matter. As a bonus result from this paradigm, mass ejection from black holes is shown to be possible, which links that process to the controversial anomalous galaxy redshifts. Finally, we show that gravitational mass and inertial mass are proportional, and that the inertial acceleration scales as c^2/M, with M a characteristic scale of the universe.

Primary author: DEJONGHE, Herwig (Ghent University)

Presenter: DEJONGHE, Herwig (Ghent University)

Session Classification: Contributed talks