The Cosmic Web in the Local Universe

27 – 31 January 2020 Lorentz Center @Oort

Description and aims: The purpose of the meeting was to gauge the status quo experts in observations, theory and analysis of what the local cosmic web looks like and how it has effected the formation of galaxies within it. We aimed to have groups working on reconstructions, groups working on observations, and groups working on theoretical and observational quantification of the cosmic web.

Tangible outcome: We had around 60 participants. The program comprise 42 talks and panel discussions every day. A number of new collaborations have been established. Papers are on their way with at least one (that we know of) submitted (Lee & Libeskind). Long term visits between various groups have been discussed and planned (but interrupted by the covid-19 crisis). One of our participants, Punya Ganeshaiah Veena, was invited to give the This Weeks Discoveries lunch lecture on Tuesday January 28 at the Faculty of Science of the Univ. Leiden.

Scientific breakthroughs: We had a number of breakthrough moments. For example, Bland-Hawthorn (Sydney) showed novel results on the detection of spin alignment flip in the GAMA survey based on IFU measurements of stellar kinematics. Neyrinck (Bilbao) made a theoretical argument that filaments should be spinning – a finding that has prompted observers (Tempel, Tartu) to search for such a signal. Ganeshaiah Veena discussed the first ever predictions from hydrodynamic simulations on the alignment of angular momentum with the cosmic web – the first such predictions on the non-linear acquisition of angular momentum by baryons. Sawala (Helsinki) showed a novel process by which constrained simulations can be used to produce large numbers of Local Groups .

Format of the workshop: We had a combination of 40 minute review talks, 20 minute result talks, and 10m min student talks. We also made time for panel discussions and debates in the afternoons. The panel discussion were a mix of “open” guided debates and presentations. Any one was welcome to participate. We tried to pair theorists with observers for each panel discussion to get both sides of a debate – for example combining Wojtek Hellwing (Warsaw) with Geraint Lewis (Sydney).

Noam Libeskind (Potsdam, Germany)
Rien van de Weijgaert (Groningen , the Netherlands)

SOC:
Joss Bland-Hawthorn (Sydney, Australia);
Helene Courtois (Lyon, France),
Florent Leclercq (London, UK),
Bridget Falck (JHU, Baltimore, USA)