

RU-C: The Origin and Evolution of Large-Scale Structure

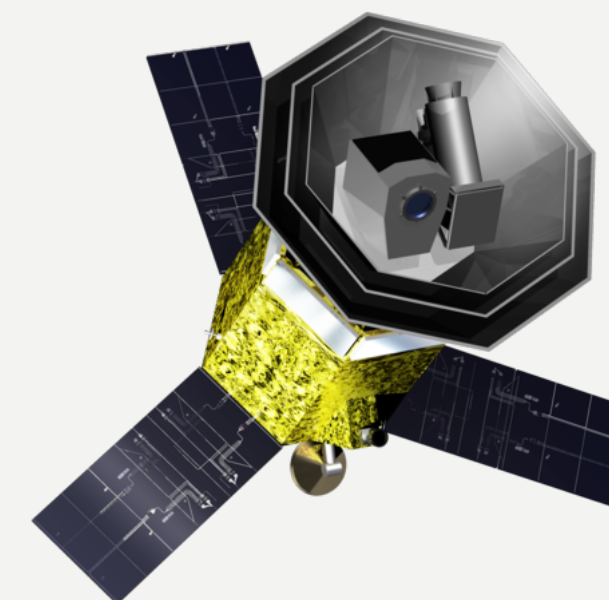
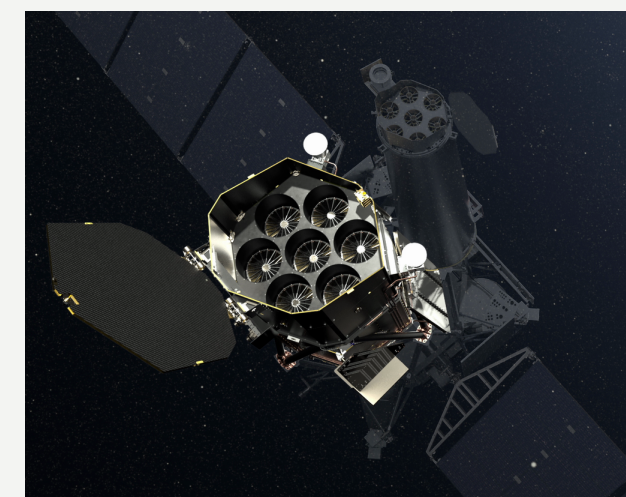
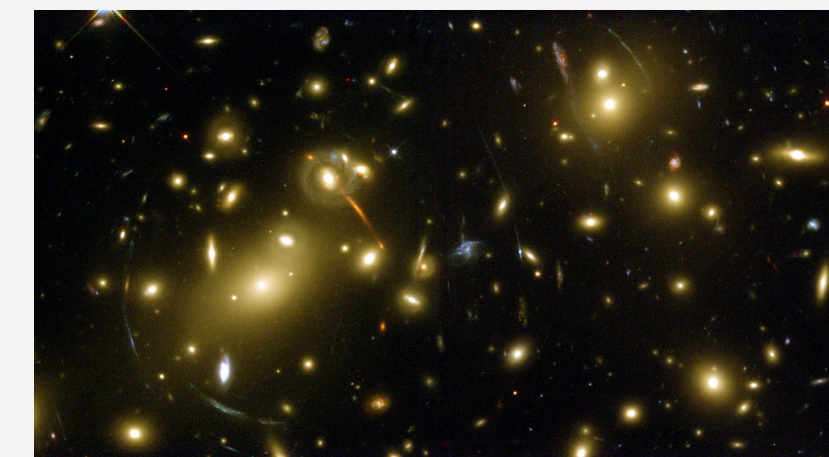
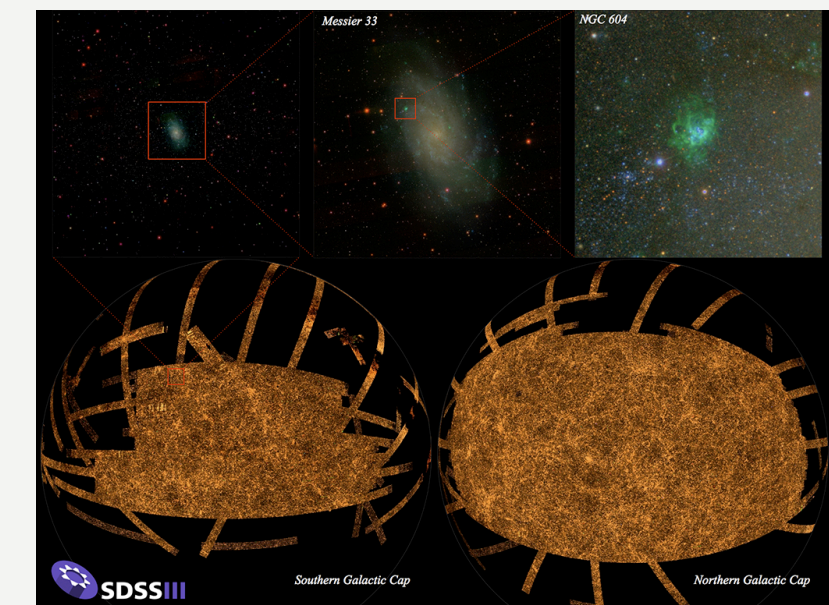
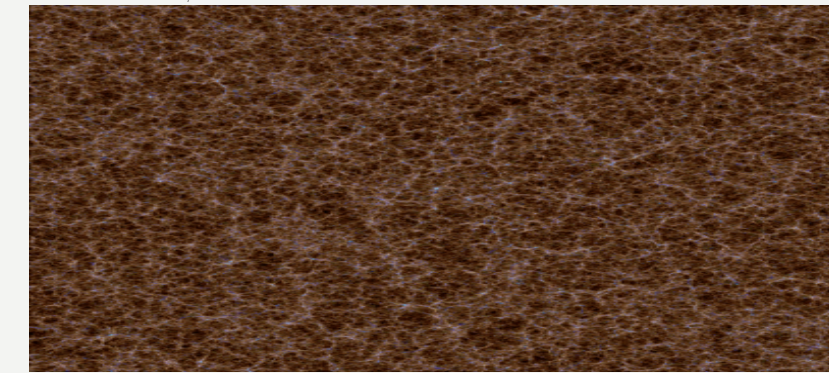
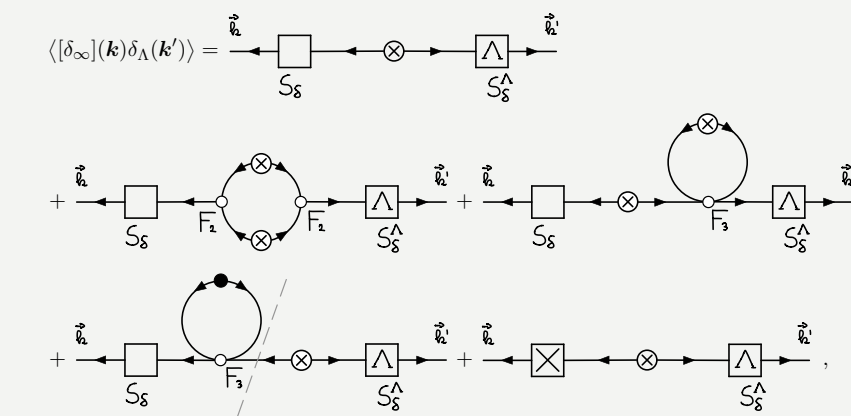
Origins 2.0 Brainstorming
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- RU-C.1: Foundations of Structure Formation
- RU-C.2: Testing Cosmological Models with Large Scale Structure Surveys
- RU-C.3: Cosmology with Clusters of Galaxies

addressing:

- the origin of initial density fluctuations
- the origin of cosmic acceleration
- the role of massive neutrinos in cosmology
- astrophysical probes of dark matter

$$S_{SPEC} = \int d^4x \sqrt{-g} \left(-\frac{1}{2}(\partial\chi)^2 - U(\chi) - \frac{1}{4}F_{\mu\nu}^a F^{a\mu\nu} + \frac{\lambda_1 \chi}{4f} F_{\mu\nu}^a \tilde{F}^{a\mu\nu} \right),$$



- Fostering of collaborations between different groups and institutions (particle and cosmology, cosmology theory and observation)
- Research enabled which would not have been possible otherwise
- Results basis for new developments and applications
- Connecting different research units worked very well (Dark Matter) and enabled new research
- Common events: Neutrino Day, Axion Day, LyX Day, Munich Dark Matter Meetings
- MIAPbP Workshops
- Visitor program enabled new projects
- Hired Personnel worked well
- Rebalancing of Sachmittel to W2/W3
- Good Support by Cluster Administration

- Activity of Connectors not visible enough
- Integration of new members in Origins - connecting new members with old ones, welcome/onboarding process
- PhD Thesis typically takes more than three years - Origins covers only 3
- Childcare arrangement for visitors
- Enhancement of Seed Money Program - to help researcher who work not in the lab
- Space/Funding for new ideas which emerge from exchange - not just seed
 - currently explored with Master thesis or other funds

- Machine Learning Experience
- New Surveys coming up: Euclid, Rubin, SKA, LiteBird, CMB-S4 - Focus on Collaborative Exploitation
- Expertise/Direction in Intensity Mapping and Radio Surveys
- Further Strengthening of Cross-Institutional / Cross-Field Interactions focused on new observational tests of theory
- Science Data Centre - Infrastructure to scientifically exploit large data sets / working collaboratively on these data sets / long term archiving of results / access for collaborators
- New Collaborative Enterprises
- Not really, already busy enough