

Impact of ongoing observational campaigns (galaxy surveys in all bands) on Cosmology and Fundamental physics

- What do we need to optimize the scientific return of future surveys?
 - Are there important lessons to be learnt from current and past surveys that are not yet fully included in future analyses?
 - Impact of survey incompleteness/modelling of observational systematics: how to deal with it?
 - What are the best strategies to account for those? Use full information but correcting for them or maximizing the purity of the sample? Sample selection vs. theoretical modelling
 - Combination of lower- and higher-orders: are we there yet? Fourier vs. configuration space
 - Projections effects in large parameter spaces
 - Cross-correlation between different observables: should we exploit it more? Can we estimate properly cross-covariances?
 - Combining and check results from different surveys to better quantify systematics
 - Is blinding crucial? Do we need more of it in our surveys?
- Simulations
 - Do we need more/more precise simulations for future surveys? Do we still need to have them at multiple cosmologies?
 - Are we extracting the right information (or whole of it)? What priors can be put on PT parameters from what we know of galaxy formation? Are we properly assessing our ignorance?
 - Do we have the capabilities to run and analyze them? Could we set up coordinated efforts?
 - Covariance matrices for future surveys

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- Higher-order correlation functions and other estimators
 - What steps are to be prioritized in this analyses?
 - 3PCF modeling beyond tree-level: what about it?
 - Is it worth to go beyond the 3PCF?
 - What other estimators can be further explored?
- Additional bands/probes
 - Are there any ranges of the spectrum which could be worth exploring further (from radio to gamma)?
 - Have we saturated what we can learn from current probes?
 - What could be the future?
- What about machine learning?
 - Direct analysis of the distribution of objects: is it worth it? Are we far from this?
 - Emulators, Graph Neural Networks, ...