

<b>PROJECT: Studi di Cosmologia</b>	<b>WP REF.: 2-6X2</b>
<b>WP TITLE: Support to data analysis for LSPE/STRIP</b> <b>SUB-CONTRACTOR: Dip. Fisica / Università di Milano</b> <b>START EVENT: KO</b> <b>END EVENT: RF</b> <b>WP MANAGER: Davide Maino</b>	<b>Sheet: 1 of 1</b> <b>Issue Ref: 1</b> <b>Issue Date:01/09/2016</b>

## 1. OBJECTIVES

- Prepare quantitative simulations of STRIP datasets including optimized scan strategy and known systematic effects
- Coordinate and contribute to the development of the analysis pipeline
- Test the performance of the pipeline by means of simulated datasets and devise strategies to mitigate systematics.
- Perform the data analysis

## 2. INPUTS

- Contract and Technical Annex
- Work plan & Schedule
- LSPE/STRIP documentation

## 3. TASKS

*Main collaborations: all nodes included in the LSPE collaboration*

- Develop a detailed instrument model and simulator
- Campaign Planning
- Simulate and optimize pointing
- Simulate and optimize instrument calibration
  - o Beams
  - o Noise spectrum (white and 1/f)
  - o Polarization leakages
  - o Polarization angles
  - o Linearity
- Analyze instrument calibration data
- Map-making algorithms
- Noise estimation algorithms
- Monte-Carlo techniques for error assessment
- Component separation codes



- Study ancillary datasets to be used for component separation
- Angular power spectra estimators
- Likelihood estimators
- Define and develop null-tests for STRIP-only data
- Define and develop null-tests for STRIP-vs-SWIPE data
- Define and develop null-tests for STRIP-vs-SWIPE data
- Cosmological parameters estimates
- Astrophysics science outputs

#### 4. OUTPUTS

- Simulation pipeline
- Simulations database
- Calibration database
- Analysis pipeline
- Analysis results

#### 5. SCHEDULE

First Year, t0+6 months

- Instrument model development
- Simulations development

First Year, t0+12 months

- Definition of calibration procedures

Second year, t0+18 months

- Analysis of calibration data
- Simulations database
- Pipeline implementation

Second year, t0+24 months:

- Analysis of simulated dataset and optimization of analysis pipeline

Third year, t0+30months:

- Preliminary data analysis

Third year, t0+36months:

Data

analysis

