

# *Euclid*-INFN@TO

*Stefano Camera*

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# The *Euclid* Mission

- *Euclid* is an European Space Agency (ESA) medium class astronomy and astrophysics space mission, selected by ESA in October 2011, and planned for launch in 2022
- The *Euclid* Consortium (EC) has the scientific responsibility of the mission, the data production, and the scientific instruments
- *Euclid* main scientific goals are:
  - Reach a **dark energy** FoM  $> 400$  using only weak lensing and galaxy clustering
  - Measure  $\gamma$ , the exponent of the growth factor, with a precision sufficient to distinguish general relativity and from wide range of **modified-gravity theories**
  - Test the **cold dark matter** paradigm for hierarchical structure formation, and measure the sum of the **neutrino masses** with a 1-sigma precision  $< 0.03$  eV
  - Probe **inflation** by constraining to percent accuracy  $n_s$ , the spectral index of the primordial power spectrum, and by measuring the non-Gaussianity of initial conditions, parameterised by  $f_{NL}$ , to a 1-sigma precision of  $\sim 2$

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## Italy in Euclid



### “Euclid-Italy” Team

- ~350 members
- Financial support from ASI, partly from MIUR (PRIN), INFN
- Universities : Bo, Mi, Na, Pd, RM1, RM2, RM3, TS, SISSA, SNS
- INAF : OABo, OABrera, OACt, OAA, OANa, OAPd, OARM, OATo, OATs, IASFBO, IASFMII, IAPS
- **INFN**: Bologna, Ferrara, Genova, Lecce, Milano, Padova, Roma1, Torino

### “Euclid-INFN” sites

- ~60 members (t.b.c.)
- Bologna: 15 members
- Ferrara: 5
- Genova: 6
- Lecce: 5
- Milano: 4
- Padova: 12
- Roma1: 12
- Torino: 8 (INFN-Pd)

Courtesy of  
Luca Stanco  
(INFN-Pd)

Note: partial overlap between INFN-INAF-UNI

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- In Turin, the newborn *Euclid*-INFN team will be composed by:
  - Stefano Camera (50%, UniTo RTDb; coordinator)
  - Konstantinos Tanidis (80%, UniTo PhD student)
  - Nicolao Fornengo (20%, UniTo Full Professor)
  - Lorenzo Fatibene (50%, UniTo Full Professor)
  - Andrea Orizzonte (80%, UniTo PhD student)
  - *Euclid*-involved INAF-OATo astronomers (TBD)
  - Interested INFN-To researchers?

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