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Open clusters through the eyes of WEAVE.

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Abstract

WEAVE is a new multi-object survey spectrograph for the 4.2-m William Herschel Telescope (WHT) at the Observatorio del Roque de los Muchachos, on La Palma (Spain). WEAVE will have two observation modes. The multi-object spectra (MOS) will allow to take optical spectra for up to ∼1000 targets over a two degrees field of view. Moreover, it will be able to carry out integral-field spectroscopy using 20 deployable mini integral-field units (mIFUs) or one large fixed integral-field unit (LIFU). WEAVE have two optical arms which allow to observed at the same time blue and red wavelengths. Moreover, two possible resolutions are available, 5000 and 20000. The first light of WEAVE is scheduled by 2019.

WEAVE will cover a wide range of scientific cases from the Galactic archaeology to the clusters of galaxies. A large fraction of the WEAVE time will be devoted to the Galactic archaeology survey that will sample the main structures of the Milky Way. In particular, on of the GA sub-surveys will study the open clusters. They are key systems to investigate a variety of astrophysical topics from the stellar evolution itself to the evolution of the Galaxy. The targets to be observed within the Galactic Archaeology Open Cluster survey (GA-OC) cover a wide range of ages, including star forming regions together with young and old open clusters. This will allow to address a large variety of scientific topics such as: star formation, stellar evolution, cluster formation and disruption, or the structure of the Galactic disk. (See poster).