X-shooter, the new wide band intermediate resolution spectrograph at the ESO Very Large Telescope - DTU Orbit (07/02/2019)

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X-shooter is the first 2nd generation instrument of the ESO Very Large Telescope (VLT). It is a very efficient, single-target, intermediate-resolution spectrograph that was installed at the Cassegrain focus of UT2 in 2009. The instrument covers, in a single exposure, the spectral range from 300 to 2500 nm. It is designed to maximize the sensitivity in this spectral range through dichroic splitting in three arms with optimized optics, coatings, dispersive elements and detectors. It operates at intermediate spectral resolution (R ∼ 4000-17 000, depending on wavelength and slit width) with fixed échelle spectral format (prism cross-dispersers) in the three arms. It includes a 1.8″ × 4″ integral field unit as an alternative to the 11″ long slits. A dedicated data reduction package delivers fully calibrated two-dimensional and extracted spectra over the full wavelength range. We describe the main characteristics of the instrument and present its performance as measured during commissioning, science verification and the first months of science operations. © ESO, 2011.