The Lives and Death-Throes of Massive Stars
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The potential of using KMOS for multi-object massive star spectroscopy

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Abstract. KMOS, the "K-Band Multi-Object Spectrometer", was built by a British-German consortium as a second generation instrument for the ESO Paranal Observatory. It is available to the user community since its successful commissioning in 2013 (Sharples *et al.* 2013). As a multi-object integral field spectrometer for the near infrared, KMOS offers 24 deployable IFUs of 2.8x2.8 arcsec and 14x14 spatial pixels each, which can either be placed individually within a 7.2 arcmin field of view or combined in a *Mosaic* mode in order to map contiguous fields on sky. The instrument covers the whole range of NIR atmospheric windows (0.8...2.5μm) with 5 spectral bands and a resolution of R $\approx$ 3000...4000.

Although the main science driver for KMOS was to enable the study of galaxy formation and evolution through multiplexed observations of high-redshift galaxies, KMOS also already exhibited its tremendous potential for the spectroscopy of massive stars: A quantitative study of 27 RSGs in NGC 300 (Gazak *et al.* 2015) proves its applicability for the spectroscopy of individual stars even beyond the Local Group. A *Mosaic* observation of the Galactic centre (Feldmeier-Krause *et al.* 2015) demonstrates how spectra of early-type stars can be extracted from a contiguous field. Other applications include (but need not be limited to) velocity determinations of globular cluster stars, observations of jets/outflows of high mass protostars, or contiguous mapping of star-forming regions.

We therefore aim at presenting the excellent capabilities of KMOS to a wider community and indicate potential applications.

Keywords. instrumentation: spectrographs, infrared: stars, stars: early-type, techniques: spectroscopic

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