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A near-infrared high-resolution spectroscopic survey of Galactic bulge stars

- JASMINE prestudy -

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Abstract. We are developing a new near-infrared high-resolution ($R_{\rm max}$= 100,000) and high-sensitive spectrograph WINERED, which is specifically customized for short NIR bands at 0.9-1.35 μm. WINERED employs the novelty in the optical system; a portable design with a near-infrared immersion grating and warm optics without any cold stops. The planned astrometric space mission JASMINE will provide the exact positions, distances, and proper motions of the Galactic bulge stars. The missing components, the radial velocity and chemical compositions, will be measured by WINERED with high accuracies (δV <10km/s). These combined data brought by JASMINE and WINERED will certainly reveal the nature of the Galactic bulge. We plan to complete this instrument with a single slit by the end of 2008 and hope to attach it to various 4-10 m telescopes as a PI-type instrument. In succession, we plan to develop a similar spectrograph but with a simultaneous multi-object spectroscopic capability for full-fledged bulge survey.

Key words. infrared: stars – instrumentation: spectrographs – stars: abundances – stars: kinematics – Galaxy: abundances – Galaxy: bulge

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