Uppsala Universitet

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http://www.fysast.uu.se/en/

Partner contact person : N. Piskunov

The Department of Physics and Astronomy of Uppsala University is one of the world-leading centres in stellar physics, galactic chemical evolution and planetary research. The emphasis is made on theoretical and observations studies of radiation-matter interaction in the outer stellar envelopes and stellar environment, dynamics and microphysics including chemistry, phase transitions, deviations from equilibrium etc. Targets of interests are chemically peculiar and active late-type stars, young stars with protoplanetary disks, stars hosting planets and stars in late stages of evolution. Methods developed or advanced at UU are spectral synthesis including NLTE, Doppler Imaging, 1D opacity sampling atmosphere modelling and 3D radiative hydrodynamic simulations. All of the above relies heavily on the availability of accurate and complete atomic and molecular data and thus UU today is the main driving force behind VALD - the major collection of AM data for cool and intermediate temperatures and low/intermediate densities. UU is also carrying out ab into calculations of collisional effects on line shapes, dust particle formation and growth and dust surface chemistry.

Key persons :

Nikolai Piskunov, professor

Expertise : high-resolution stellar spectroscopy, spectral synthesis in 1D and 3D, stellar atmospheres, atomic and molecular data, partition functions and molecular equilibrium, radiative transfer in the presence of magnetic fields.

Role in VAMDC project : Coordinator of JRA2, participation in WP4, WP6, WP7

Bengt Edvardsson, assistant professor

Expertise : high-resolution stellar spectroscopy, spectral synthesis in 1D, stellar atmospheres, atomic and molecular data.

Role in VAMDC project : SA1, JRA1, JRA2

Kjell Eriksson, assistant professor

Expertise : high-resolution stellar spectroscopy, spectral synthesis in 1D, stellar atmospheres, atomic and molecular data.

Role in VAMDC project : SA1, JRA1, JRA2

Paul Barklem, researcher

Expertise : spectral line formation, collisional cross-section calculations, NLTE, spectral synthesis, atomic and molecular data, partition functions and molecular equilibrium.

Role in VAMDC project : WP7

Ulrike Heiter, researcher

Expertise : high-resolution stellar spectroscopy, abundance analysis, stellar atmospheres, atomic and molecular data, spectral synthesis in NLTE.

Role in VAMDC project : WP4, WP6, WP7

Andreas Korn, research assistant

Expertise : high-resolution stellar spectroscopy, spectral synthesis in NLTE, stellar atmospheres, atomic and molecular data.

Role in VAMDC project : SA1, JRA1, JRA2

Oleg Kochukhov, research assistant

Expertise : high-resolution stellar spectroscopy, spectral synthesis in NLTE, stellar atmospheres, atomic and molecular data, Doppler Imaging, asteroseismology.

Role in VAMDC project : WP7

Thomas Marquart, PhD Student

Role in VAMDC project: WP6, WP7

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