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Stellar atmospheres

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Title: Non-LTE zinc abundance in different spectral type stars and Galactic [Zn/Fe] trend
Abstract: We present the non-LTE line formation calculations for Zn I-II in stars in a wide range of spectral types. The most accurate atomic data available to date were adopted, namely, quantum mechanical rate coefficients for inelastic collisions with hydrogen atoms and electronic collisions, and laboratory measurements of the oscillator strengths, where available. For the first time we investigated the departures from LTE for the UV Zn I and Zn II lines in very metal poor (VMP) stars. For three VMP reference stars, we found a satisfactory agreement within 0.2 dex between non-LTE abundances from different Zn I and Zn II lines. We determined non-LTE abundances of Zn in a sample of solar vicinity dwarfs in a wide metallicity range, -2.6 < [Fe/H] < 0.2. Metal-poor stars with [Fe/H] < -1 show constant [Zn/Fe] = 0.2, while a spread from 0 to [Zn/Fe] = -0.2 was found at solar metallicity. The diversity of [Zn/Fe] in stars with close to solar metallicity is confirmed from non-LTE analysis of Zn and Fe lines in BAF type stars.

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