

ON THE ESTABLISHMENT OF INTERNALLY CONSISTENT ABUNDANCE-OSCILLATOR STRENGTH SCALES

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## Abstract

The method of establishing of internally consistent abundance-oscillator strength scales by using solar fraunhofer lines is elaborated and investigated.

The error of internal accuracy should not exceed 0.05 - 0.06 dex. The absolute accuracy depends on the accuracy of "reference" gf-values.

The oscillator strengths for about 800 Fe I lines are obtained. The comparison of the results for 19 lines common in our and Blackwell et al. (1976) investigations gives the difference  $\log gf_{\text{Black}} - \log gf_{\text{auth}} = \Delta = -0.044 \pm 0.010$ . The accidental part of the difference actually determines the internal accuracy of the obtained oscillator strengths.

The Kurucz and Peytremann (1975) oscillator strengths for Fe I lines are analysed. Large systematic errors depending on gf and excitation potential are revealed and investigated. For some lines those errors may change the true values of gf by two orders of magnitude.

DIFFERENTIAL ROTATION AND MAGNETIC ACTIVITY OF THE LOWER MAIN SEQUENCE STARS

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