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### **Determination of spectral parameters of a few selected bright stars using spectrum synthesis method**

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In astronomy, determination of stellar parameters such as effective temperature, surface gravity and metallicity of stars can be used to improve our understanding about the evolution of stars.

Medium resolution spectra of 13 bright stars of different spectral types and luminosity classes have been observed during the period December, 2011 to July, 2012 using the Monk-Gillieson type spectrograph with plane reflective grating (900 grooves/mm) attached to the 45 cm GOTO reflecting telescope at the ACCIMT observatory. Surface temperature, surface gravity and metallicity of these stars have been derived comparing the observed spectra with synthesized spectra generated by the software SPECTRUM using the Kurucz model atmospheres. Synthesized and observed spectra were compared using the minimum distance method (MDM) with the help of MATLAB program.

The results indicate that the synthesized spectrum can be used as a new method to find stellar properties other than the existing methods such as IR flux method, interferometry measurements, photometry and theoretical equations that are employed.

The stellar properties obtained using this new technique for HD30652, HD34085, HD38771 and HD39801 stars tally with those of previous work and validate the accuracy of this new method. To increase the accuracy of the results telluric absorption and interstellar reddening should be removed from the observed spectra.

The logarithmic values of surface gravity of stars HD26574, HD50019, HD56986 and HD74280 were found to be 3.00, 3.00, 1.00 and 3.50 respectively. The metallicities of these stars were found to be M05, M02, M15 and M0 respectively. To the best of our knowledge this is the first time that stellar parameters of those stars have been revealed.