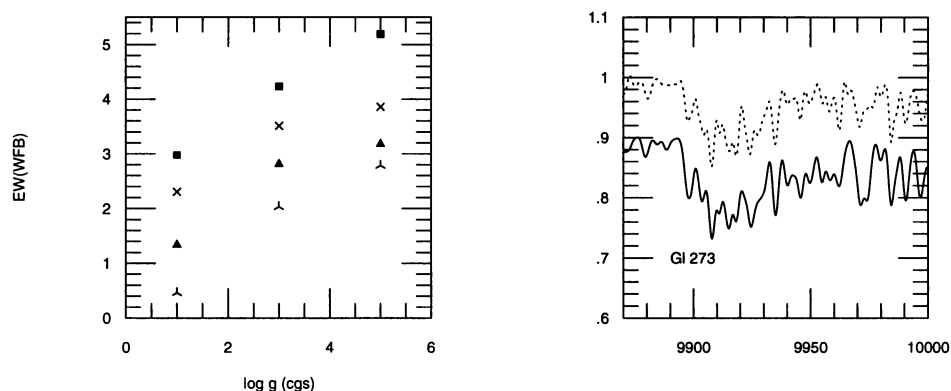


## THE NEAR INFRARED FEH LINES AS INDICATORS OF SURFACE GRAVITY OF M STARS

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We compute synthetic spectra in the region around  $1 \mu\text{m}$ , including the Wing-Ford band (WFB) of Iron Hydride (FeH) in the calculations. This band is known to be a good indicator of surface gravities of M stars. Employing Kurucz model atmospheres, we study the response of the intensity of the WFB to atmospheric parameters and check our results against observations of M dwarfs. This study is part of an ongoing project which aims to investigate the M dwarf-to-giant ratio in galaxies, through a population synthesis method, exploring a number of spectral indicators in the near infrared, such as the WFB, the NaI, CaII and CO near infrared features.



*Figure 1.* Left: the behaviour of the Equivalent Width of FeH lines in the spectral interval 9890-9970 Å as a function of stellar surface gravity ( $\log g$ ) for effective temperatures of  $T_{\text{eff}} = 3500, 3700, 3900$  and  $4200$  K. Right: comparison between synthetic and observed spectra of an M dwarf star of  $(T_{\text{eff}}, \log g, [\text{Fe}/\text{H}]) = 3500, 5.1, 0.0$ . This work was based upon observations collected at Laboratório Nacional de Astrofísica, Braçópolis, Brazil.