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We describe an observationnal programme of AF and AmFm stars in open clusters of various ages. The spectroscopy is carried out with ELODIE, the echelle spectrometer at the Observatoire de Haute Provence (France) attached to the 193 cm telescope. Spectra stretch from 3920 Å to 6800 Å at a resolving power of about 40000 (at 5000 Å) and Signal to Noise ratios varying from 100 to 300 according to magnitude. Abundances of several chemical elements have been derived by adjusting synthetic spectra to lines having good atomic parameters. Synthetic spectra were calculated using Hubeny and Lanz's code SYNSPEC and Kurucz's ATLAS9/12 model atmospheres. These abundances serve to set constraints to self-consistent evolutionary models of A and F stars including transport processes. Detailed comparisons of these models with abundance determinations of individual stars in clusters of various ages will be presented.
