

How Much do we Trust Stellar Models? – Foreword –

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Figure 1: A Tribute to Arlette by her longtime friend Annie Baglin

1 Conference rationale

Eighty years ago, Paul Ledoux, then in Chicago, published with Chaim Leib Pekeris the now famous work entitled Radial Pulsations of Stars. Stellar evolution was still in its infancy, numerical models

were not computed on a massive scale as today. With the advent of computers and the improvement of observational data, the study of stellar structure and evolution has now become a central field of astrophysics, and pulsations have become the prime method to learn about the internal structure of stars.

In the last fifteen years space telescopes provided us a tremendous amount of data, opening the way to test stellar models with unprecedented thoroughness. It is now up to theoretical stellar physicists to use these observations to improve stellar models and provide accurate stellar properties to fields such as exoplanetary science and Galactic archeology.

The last decades were also marked by the achievements of a remarkable scientist, an inspiring colleague, a patient teacher and a friend, who devoted herself to our field of research and who celebrated her 75th birthday in August 2018, Arlette Grotsch-Noels. This conference is a tribute to Arlette.

The aim of this workshop was to bring together experts of theoretical stellar physics and Galactic archeology to discuss the current issues connected to stellar structure and evolution. Topics ranged from microphysical ingredients such as atomic diffusion and radiative opacities to macrophysical processes such as rotational mixing and turbulence and their connexion to the solar modeling problem, the evolution of solar-like and massive stars, as well as the modeling of red giants and the importance of these Galactic candles to unravel the history of the Galaxy.

Happy birthday Arlette!



Figure 2: A Tribute to Arlette by her longtime friend Hiromoto Shibahashi

2 Some fun as well?



Figure 3: After effort comes comfort



Figure 4: Arlette's friends at the conference dinner



Figure 5: Arlette with Carla, Georges and Cristina

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