

## INTRODUCTORY ADDRESS

Margherita HACK  
Astronomical Observatory, Trieste, Italy

Dear Colleagues

It is a pleasure to welcome you here again also on behalf of the Director and vice-Director of the International Centre of Theoretical Physics, Profs. Abdus Salam and Paolo Budini. This is the 6th colloquium of Astrophysics organized by the Trieste Observatory, and the 59th colloquium of the IAU. A very similar, although more restricted topic (Mass-loss from stars) was discussed in this same hall twelve years ago. At that time we heard Don Morton tell us about his first observations of UV stellar spectra taken from rockets, and then we were certain that hot bright stars were losing mass. Actually much evidence of mass loss was known from visual observations, like expansional velocity, velocity gradients, and emission lines, but in all cases (with the exception of some WR stars) the observed expansional velocities were much less than escape velocities. Only the first UV observations demonstrated that the strong resonance lines of the abundant ions have expansional velocities of several thousands of km/s, much higher than escape velocities. Now, mainly thanks to the work done with Copernicus and IUE in the UV and with the Einstein satellite in the X-ray range, we know that mass-loss and chromosphere-corona-wind complexes are present almost everywhere in the HR diagram and that mass-loss is a phenomenon which can affect, maybe drastically, the evolution of massive stars. Moreover, our radiative atmospheric models, with all the non-LTE-refinements, are not adequate to describe stellar spectra; non-thermal motions must be considered. Non-thermal motions exist, and we still do not understand what the physical mechanisms producing super-ionization in chromospheres and coronas are; hence, a field which until a few years ago was believed to be established on firm bases is once again wide open and controversial. I hope here the presentation of new observational data and new attempts at interpretation will stimulate lively discussions, and bring about further new progress.

SESSION I - WINDS FROM EARLY TYPE STARS: OBSERVATIONS

Chairman: R. N. THOMAS

SESSION II - WINDS FROM LATE TYPE STARS: OBSERVATIONS

Chairman: P. PISMIS

SESSION III - WINDS FROM EARLY TYPE STARS: THEORY

Chairman: M. HACK

SESSION IV - WINDS FROM LATE TYPE STARS: THEORY

Chairman: A. MAEDER

SESSION V - MASS LOSS AND STELLAR EVOLUTION: MASSIVE STARS

Chairman: P. S. CONTI

SESSION VI - MASS LOSS AND STELLAR EVOLUTION: LOW MASS STARS

Chairman: L. GOLDBERG

SESSION VII - MASS LOSS AND STELLAR EVOLUTION: INTERMEDIATE MASS STARS

Chairman: R. STALIO

SESSION VIII - EFFECTS OF MASS LOSS ON THE EVOLUTION OF BINARY STARS

Chairman: I. IBEN JR.

SESSION IX - EFFECTS OF MASS LOSS ON THE INTERSTELLAR MEDIUM

Chairman: H. J. G. L. M. LAMERS