INTRODUCTION

Laudation for Friedrich Wagner: recipient of the 2007 European Physical Society Plasma Physics Division Hannes Alfvén Prize

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Friedrich Wagner

The 2007 divisional Hannes Alfvén Prize was awarded during the opening ceremony to Professor Friedrich Wagner (IPP Greifswald), who is the current chairman of the European Physical Society, and a member of the Max Planck society. The laudation for this academic distinction reads as follows.

> Professor Friedrich Wagner is awarded the Hannes Alfvén prize for his continuing outstanding contributions to research into fusion by magnetic confinement.
>
> His discovery of the high-confinement mode (H-mode) in the ASDEX tokamak and subsequent work on transport barriers brought on a new era in nuclear fusion research,

with consequences for ITER and future fusion reactors. Historically, study of the high-confinement mode led to the discovery of the stabilizing effect of sheared flows on plasma turbulence, implying a revolutionary step forward in the understanding and control of plasma turbulence and transport. The best fusion performance to date has been obtained in plasma conditions involving transport barriers and the concomitant turbulent transport reduction.

The successes achieved by the Wendelstein 7-AS experiment have re-vitalized the stellarator as a viable alternative confinement concept. Thus, although the next major magnetic confinement device ITER is a tokamak, it has become clear that other magnetic confinement concepts offer significant potential advantages, while a single machine concept may not provide a comprehensive solution for all possible applications of fusion energy. Contributions from the Max Planck Institute stellarator team led by Professor Wagner have shown that the performance and physics of confinement in stellarator devices are of general interest to the fusion community.

Professor Wagner plays a leading role in both tokamak and stellarator communities and stands out by his ability to summarize the essence of seemingly complex plasma phenomena. His open-minded approach to promoting the development of plasma physics has stimulated the creation of multi-disciplinary links between different scientific communities.

Jo Lister

Chairman of the European Physical Society Plasma Physics Division