1998 Brouwer Award Winner - Sverre Aarseth

The following is from the citation for the award:

Sverre Aarseth (Institute of Astronomy, University of Cambridge) has almost singlehandedly pioneered and pursued the development of N-body simulations as a powerful and reliable tool for studying the dynamics of stellar systems. He has not only set the standards, but also the tone, in this entire field for well over 30 years now.

Aarseth developed a unique set of N-body codes that make it possible to study gravitational systems where encounters and collisions are important. He pioneered the use of regularization methods, and continues to adapt his codes to improving computer technology (e.g., the special purpose GRAPE system). Aarseth freely distributes and supports his codes, and he has worked particularly hard to make them available in third world countries. They have become the industry standard. In particular his NBODY5 has no rivals.

Aarseth has used these codes to make seminal contributions to a wide ange of dynamical problems. He discovered that encounters in globular clusters inevitably lead to the formation of binaries, which play a decisive role in the evolution of these systems. With Binney he showed that collapse from aspherical initial conditions naturally leads to triaxial equilibrium configurations, a discovery that transformed the field of dynamics of elliptical galaxies in the late seventies. He studied prototerrestrial planetary evolution, and was the first to simulate the development of large-scale structure in the Universe through gravitational instability. Other applications include the dynamics of open clusters and of merging galaxies.

Aarseth's work is a unique and important contribution to the entire field of dynamical astronomy. It has become an indispensable part of astronomy and astrophysics, and Aarseth himself remains a major influence. His willingness to share, his integrity, his precision, and his persistent enthusiasm to modify his codes to accomodate the research needs of others have influenced an entire generation of dynamicists. We, as a community, owe him much.