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How it all started

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As a graduate student I had the privilege to learn from Daiichiro Sugimoto (then Visiting Gauss professor at Uni Goettingen) and Erich Bettwieser. A gaseous or moment model of star clusters was designed. Gravothermal oscillations were detected using this model, which inspired star cluster dynamics for many years, if not decades. I could contribute a little to the model by adjusting the heat conductivity for nuclear star clusters with supermassive central black hole and anisotropy. Douglas Heggie and Sverre Aarseth also visited my supervisor Erich Bettwieser in Goettingen during that time, so I could meet them and get the base of a future cooperation. Sverre Aarseth hosted me as a young graduate student and later postdoc in Cambridge many times, and Douglas Heggie in a project at Edinburgh University, both being always patient and extremely supportive. In Edinburgh I also met Mirek Giersz for the first time, starting a collaboration which lasts until today; with Douglas and Mirek we did quantitative comparisons between all different models, one plot of this work is in a standard textbook now (Binney/Tremaine). With Sverre I did a record 10k N-body simulation on a CRAY supercomputer, which was soon superseded by Jun Makino's 64k particle model on a GRAPE special purpose computer. Building GRAPE had been pushed forward by Daiichiro Sugimoto and Jun Makino, our team was one of the first receiving a GRAPE board outside of Japan in a collaborative project. I am grateful to Gerhard Hensler in Kiel, and Roland Wielen in Heidelberg for supporting me in the next steps as assistant professor in Kiel and staff researcher and professor in Heidelberg, respectively. GPUs finally superseded GRAPE, but the software designed by the Japanese team made a very quick start possible using GPU. That then brought me to China, where a project to build a large GPU cluster was approved in 2010, and brought our team, including Peter Berczik, to Beijing. Some years full time, some years part time I have been working at NAOC and KIAA ever since. A very talented PhD student (Long Wang) came along and did the first honest and realistic million body simulation, the DRAGON simulation, using Nbody6++GPU (which he had significantly improved). That simulation had been the goal behind GRAPE construction, stated by Daiichiro Sugimoto in Nature (1990), and Douglas Heggie later announced a prize for the first such simulation, which went to Long Wang. I remember Douglas saying that he did not expect that this award would go to China... Recently modelling self-interacting dark matter has revived interest in gaseous or moment models again. I am lucky that I could benefit from all my teachers and collaborators, many more not mentioned in this short abstract and may be even not in the talk.

Affliation

Univ. of Heidelberg (Germany); NAOC, CAS and KIAA, Peking University (China)

Current Position

Senior Scientist or Faculty

Primary author: SPURZEM, Rainer (ARI/ZAH, Univ. of Heidelberg, Germany; National Astronomical Observatories, CAS, Beijing, China; Kavli Institute for Astron. and Astrophysics, Peking University, Beijing, China)

Presenter: SPURZEM, Rainer (ARI/ZAH, Univ. of Heidelberg, Germany; National Astronomical Observatories, CAS, Beijing, China; Kavli Institute for Astron. and Astrophysics, Peking University, Beijing, China)

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