Increasing the power efficiency of PCs by improving the hardware/OS interaction

Chris Schläger
Director Operating System Research Center, AMD

This presentation will discuss the challenges of modern PC systems to reduce their power consumption. While efforts are made on all levels from the silicon to the software PC systems still use 2 to 3 orders of magnitude more power than mobile devices. The presentation will outline some of the reasons for this and how this problem is being addressed on the PC architecture side as well as from the operating system side. It will also discuss the tradeoffs that have to be made. Peak performance and low idle power consumption are two contradicting design goals. Growing number of CPU cores and new mechanisms to turn off unused units create new challenges for the OS. The talk will discuss some strategies developed by AMD to address this.