

WSSP - Power and Performance

The biggest driver of computing performance are hardware improvements. Even though the relative energy efficiency (e.g. FLOPS/watt) is improving at an almost exponential rate this does not translate in any reduction in absolute energy consumption. Rebound effects like this have been studied for centuries in economics starting from Jevons (1865) but there is still no consensus if economic growth can be decoupled from absolute energy consumption. Here I will argue that we face a similar problem in computing, i.e. that performance cannot be decoupled from absolute energy input. This in turn casts doubt on the feasibility of sustainability efforts like the GREENER (2023) principles. I will close by evaluating several accounts of why we still could want to improve performance even in the light of such hard tradeoffs.