Energy and power efficiency are key design criteria in modern operating systems due to performance, thermal, and environmental considerations. A more energy-efficient system is not only more environmentally friendly but often also 1) clocks faster, 2) reduces the amount of Dark Silicon, and 3) utilises the installed cooling potential in HPC systems more optimally. This talk explores the impact of software mitigations for hardware vulnerabilities on the energy efficiency in the Linux kernel. Additionally, it presents an approach to dynamically reconfigure software mitigations in Linux tailored to the application requirements to improve the energy efficiency.

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