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Predictive Models for Thermal Modelling

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We hear it almost every day but we barely recognize, it's the noisy fan of our laptop. We feel it with our hands in the summer, it's our mobile getting too hot. It's the heat dissipated by electronics devices. Digital processing elements, the heart of our smartphone, laptop, workstation and supercomputers dissipate power for flipping bits of information, this power increases the temperature of the silicon. The heat must be removed to keep the electronics safe.

In the Multitherman ERC advance project we studies techniques for extract physically valid compact models directly from the final device, and to combine these with optimization strategies preserve the working temperature of the processing element. In this presentation I will give the basic knowledge on the problem an overview of the recent advances in the thermal modelling of real electronics devices.

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