EPFL-Inria
INTERNATIONAL LAB

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Inria
INVENTEURS DU MONDE NUMÉRIQUE

Workshop EPFL-Inria
15 et 16 février 2018, Paris

Baptiste Leplers, EPFL

Title: « Formal verification of multi-core schedulers »

Abstract:
In this talk I will address the development of multi-core schedulers with provable correctness properties. Multi-core schedulers are complex, and notoriously hard to get right. For instance, the Linux scheduler is more than 40K lines of code long, and may unintentionally leave cores idle while there are runnable threads waiting in runqueues. In this talk I will present a methodology for designing, implementing, and verifying properties of multicore schedulers, such as liveness (freedom from starvation -- all applications will eventually be executed) or work-conversation (no core is left idle when work is ready to be scheduled).