Single-ISA Heterogeneous Multi-Core Architectures:
The Potential for Processor Power Reduction

Rakesh Kumar,Keith I. Farkas,Norman P. Jouppi,Parthasarathy Ranganathan,Dean M. Tullsen
Proceedings of the 36th International Symposium on Microarchitecture (MICRO-36'03)

Advanced computer architecture
CSE 8383

What is Multi-Core Architectures?

- *a multi-core processor delivers two or more complete execution units - or cores - in a single, physical processor. all cores run at the same frequency, and are plugged into a single processor socket. they also share the same platform interface, which connects them to memory, I/O and storage resources.*

General Idea

- *This paper proposes and evaluates single-ISA heterogeneous multi-core architectures as a mechanism to reduce processor power dissipation.*

- *Main Point : gathering heterogeneous architectures on a die . for an application; choose the most power efficient processor given some performance constraints ➔ save power*