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### **Characterizing Applications based on Cache-aware Roofline Model**

Abstract: Insightful models able of correlating application requirements and platform capabilities, such as the Cache-Aware Roofline Model, are essential for software development and applications design. However, due to their simplicity, these models are not capable of encapsulating all possible bottlenecks contained in current micro-architectures, which limits their accuracy for characterizing real-world applications. In this talk, a set of novel Cache-Aware Roofline Models are proposed, which allow to improving model insightfulness and usability, as well as to provide more accurate hints regarding application optimization. To validate the proposed models, several applications from standard benchmark suites are characterized in the most recent Intel architectures. The accuracy of the proposed models is assessed against the state-of-the-art modeling approaches.