

Interactive Computing Framework for Engineering Applications

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Abstract—In this paper, we introduce an integration framework for engineering applications that supports distributed computations as well as visualisation on-the-fly in order to reduce latency and enable a high degree of interactivity with only minor code alterations involved. Moreover, we tackle the problem of long communication delays in the case of huge data advent, which occur due to rigid coupling of simulation back-ends with visualisation front-ends and handicap a user in exploring intuitively the relation of cause and effect.

Keywords: interactive computing; computational steering environment (CSE), multithreading, thread synchronisation