plex plasma systems [8], but recently extended to other application areas ranging from molecular dynamics to protoplanetary accretion discs [9]. For PEPC, we have adopted the Warren-Salmon 'hashed oct-tree' scheme

particle key-list and allocating these to the processors. The fully parallel sort currently implemented is an adaptation of the PSRS (parallel sort by regular sampling) scheme originally proposed in Ref. [15]. Since the distribution of keys depends sensitively on the geometry of the system simulated—that is, whether the particles are initially arranged in a cube,   or moje complex geometry—jegular sampling tends to produce highly imbalanced particle numbers across the processors. T

the wrong message. The former are usually described by pairs of enter and exit events, whereas the latter are described by more complex compound events usually involving more than two events covering multiple locations, a situation which can easily arise in a tree code.
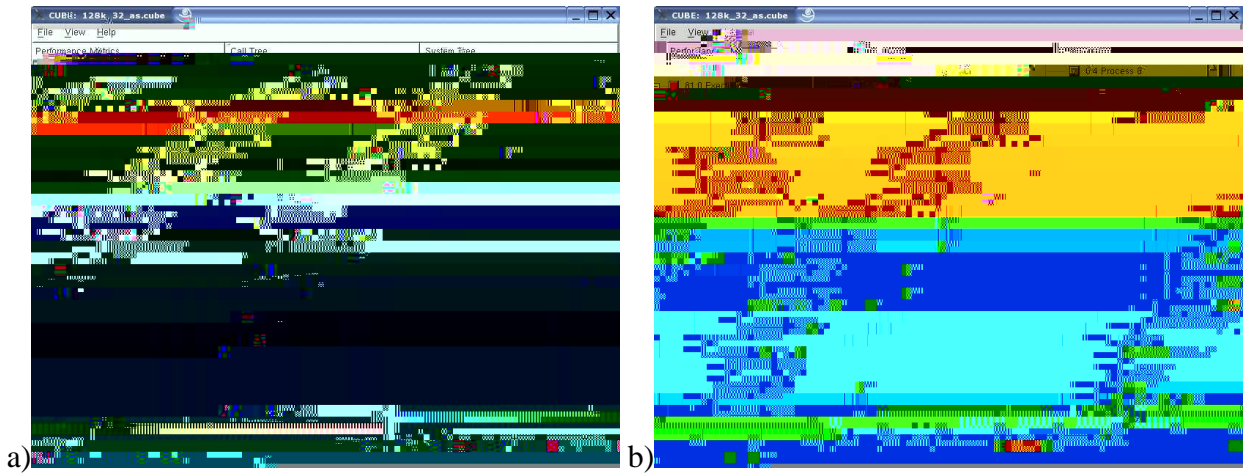

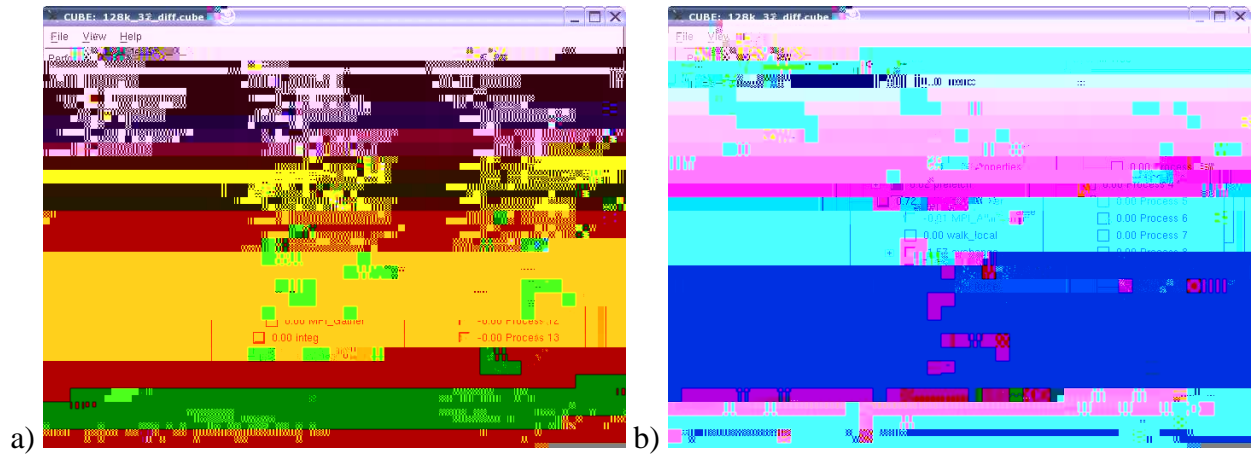Figure 2. KOJAK EXPERT analysis of a 40-timestep PEPC test run using the

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Figure 3. Differential analysis of PEPC sphere simulations comparing the asynchronous tree walk in Fig. 2 to the 'freeze' mode described in Sec. 2): a) execution breakdown; b)

be difficult to trace without the direct visual relationship between work load and spatial location provided by this technique.

Summary

A new parallel-ish4tou7t8c6h6o0bEd(troem)Jjare21.3Adl the'd (code)Tj 26.8435 0 Td (–)Tj 10.3095 0 Td (PEPC)Tj 3