Multiscale modeling of the human arterial tree on the TeraGrid.

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A multiscale model of the human arterial tree will be presented consisting of the macrovascular network (MaN, arteries above 1-2 mm), the mesovascular network (MeN, arterioles above 10 micro-m) and the microvascular network (MiN, capillaries). Coupling conditions between the MaN-MeN-MiN will be discussed and three different methods in modeling each network will be presented. Specific examples will be shown for the intracranial arterial tree for healthy subjects but also for patients with hydrocephalus.