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*"La mente è come un paracadute.
Funziona solo se si apre"
A. Einstein*

Large-Scale Computational Strategies for Optimal Cancer Treatment Design

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Abstract

Treatment planning for radiation therapy is inherently complex due to the number of input parameters involved. The complexity is amplified by the uncertainty of tumor shapes due to organ motion, by dose estimation, by availability of biological information, and by multiple and competing clinical objectives within the planning procedure. In this talk, we describe some of our experiences in cancer treatment design related to these issues. Various optimization methods will be contrasted, and computational challenges will be discussed. The quality of resulting treatment plans from our system versus plans from current clinical systems will be compared.