OPTICAL TOMOGRAPHY AS AN INVERSE RADIATION PROBLEM

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ABSTRACT. Optical tomography belongs to the promising set of non-invasive methods for probing applications of semi-transparent media. This covers a wide range of fields. Nowadays, it is mainly driven by medical imaging in search of new less aggressive and affordable probe means. This review paper aims at presenting the most recent research accomplished in our laboratories as well as that of collaborative institutions considering the development of imaging algorithms. The light transport modelling is not an open question as it used to be. Research is now focused on data treatment and reconstruction. Since the turn of the century, the exploding power of low cost computing has permitted the development of enhanced imaging algorithms with great potential. Some of these developments are already on the verge of clinical applications. This review paper presents these developments and also provides some insights on still unresolved challenges. Intrinsic difficulties are identified and promising directions for solutions are discussed.