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Passive phase-locking and coherent combining of lasers

Prof. Amiel Ishaaya

Ben-Gurion University of the Negev, Israel

Thursday 15 March 2018

3:00 PM

Sala SITI, Corso Castelfidardo, 30/A - 10138 Torino

The possibility of combining several lasers into one high brightness powerful laser beam is appealing to many practical applications. Various beam-combining approaches have been investigated which can be divided into three main categories: incoherent, active coherent, and passive coherent combining approaches.
This talk will focus on passive interferometric laser beam combining using compact, plane parallel, intracavity combiners. The basic configurations along with our results in both solid-state and fiber laser configurations will be presented, and various aspects and the possible up-scalability of this approach will be discussed.

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Amiel A. Ishaaya received the B.Sc. and M.Sc. degrees from Tel Aviv University, Israel, and the Ph.D. degree from the Weizmann Institute of Science, Israel, in 2005, all in physics. From 1994 to 2001, he was working with Elop Electro-Optics Ltd., on various laser development projects. From 2005 to 2007, he was a Post-Doctoral Research Associate with Cornell University, NY, studying collapse dynamics of high-intensity optical beams and nonlinear interactions in photonic crystal fibers. In 2007, he joined the Ben-Gurion University, Israel, where he is currently a tenured associate professor. His group is developing pulsed coherent light sources and is conducting experimental investigations on various aspects of light-matter interactions in the high peak power pulsed regime. Prof. Ishaaya has authored or co-authored over 130 papers published in journals and conference proceedings, 20 technical reports, and holds several U.S. patents, all in the fields of optics and lasers.

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