**Topological Trapped-Rainbow and Nonreciprocal Guides Beyond the Time-Bandwidth Limit**

Iridanos Loulas and Kosmas L. Tsakmakidis

Section of Condensed Matter Physics, Department of Physics, National and

Kapodistrian University of Athens, Greece

Correspondence e-mail address: ktsakmakidis@phys.uoa.gr

Abstract: Topologically protected wave transport has recently emerged as an effective means to address a recurring problem hampering the field of ‘slow light’ for the past two decades: Its keen sensitivity to disorders and structural imperfections. With it, there has been renewed interest in efforts to overcome the delay-time–bandwidth limitation usually characterizing slow-light devices, on occasion thought to be a ‘fundamental limit’. Our talk will overview latest developments and point out important new functionalities that overcoming the limit can enable.

**Short Bio:**

Kosmas L. Tsakmakidis obtained his Doctorate degree (PhD) in Applied Physics and Engineering from ATI, University of Surrey (2009). During 2008-2013 he was a Royal Academy of Engineering/EPSRC research fellow, first at the ATI, University of Surrey (2008-2010), and then in the Condensed Matter Theory Group, Department of Physics, of Imperial College London (2011-2013). He subsequently worked as a senior postdoctoral research fellow in the Department of Mechanical Engineering of the University of California, Berkeley (2014-2015), a Eugen Lommel postdoctoral fellow at the Max Planck – University of Ottawa Center for Extreme and Quantum Photonics & the Department of Physics, University of Ottawa (Canada, 2015-2016), and as an EPFL Fellow in the Bioengineering Department, École Polytechnique Fédérale de Lausanne (EPFL), Lausanne (Switzerland, 2017-2018). Since March 2018 he is an assistant professor (tenured since Nov. 2021) in the Department of Physics, Section of Condensed Matter Physics, of the National and Kapodistrian University of Athens (NKUA), Greece.