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### **Route to Coherent Electronics**

ELEFTHERIOS GOULIELMAKIS, Max-Planck-Institut für Quantenoptik, Hans-Kopfermann-Str. 1, D-85748 Garching, Germany

Laser-driven generation of coherent radiation in bulk solids extending up to the extreme ultraviolet part of the spectrum [1] has recently open up completely new possibilities for study of electronic phenomena which lie beyond the scope of standard condensed phase physics spectroscopies. I will present how previous [2] and new tools of attosecond metrology [3][4] can now allow us to gain detailed insight into the fundamental microscopic processes responsible for the EUV emission in solids. We will show that this emission is in reality a macroscopic probe of nanoscale intraband coherent electric currents [5] the frequency of which is extending into multiPetahertz range. On the basis of these findings, I will try to persuade you that we are now entering the realm of coherent electronics. A regime in which electronic circuitry can be conceived on the atomic level and where electronic properties of materials can be accessed [5] and controlled on attosecond time scales.

[1] Luu T.T. et al., Nature 521,498 (2015),[2] Goulielmakis E. et al., Science 305, 1267 (2004) [3] Wirth A. et al., Science 334, 195 (2011). [4] Hassan M. Th et al., Nature 530, 66 ( 2016) , [5]Garg et .al., Nature 538, 359 (2016).