

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**Cavity mode enhancement of terahertz emission from equilateral triangular microstrip antennas of the high- $T_c$  superconductor  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$** <sup>1</sup> CONSTANCE DOTY, Univ of Central Florida, DANIEL CERKONEY, Rutgers University, ASHLEY GRAMAJO, TYLER CAMPBELL, University of Central Florida, CANDY REID, Lockheed Martin, MANUEL MORALES, Massachusetts Institute of Technology, KAVEH DELFANAZARI, University of Cambridge, TAKASHI YAMAMOTO, University of Ulm, Germany, MANABU TSUJIMOTO, TAKANARI KASHIWAGI, CHIHARU WATANABE, HIDETOSHI MINAMI, KAZUO KADOWAKI, University of Tsukuba, Japan, RICHARD KLEMM, Univ of Central Florida — We study the transverse magnetic (TM) electromagnetic cavity mode wave functions for an ideal equilateral triangular microstrip antenna exhibiting  $C_{3v}$  point group symmetry, which restricts the number of TM(n,m) modes to  $|m - n| = 3p$ , where the integer  $p > 0$  for the modes odd and even about the three mirror planes, but  $p = 0$  can also exist for the even modes. We calculate the wave functions and the power distribution forms from the uniform Josephson current source and from the excitation of one of these cavity modes, and fit data on an early equilateral triangular  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$  mesa, for which the  $C_{3v}$  symmetry was apparently broken.

<sup>1</sup>Work supported in part by the UCF RAMP, JSPS Fellowship, CREST-JST, and WPI-MANA

Richard Klemm  
Univ of Central Florida

Date submitted: 10 Nov 2016

Electronic form version 1.4