

**DEUTSCHES ELEKTRONEN-SYNCHROTRON**  
**Ein Forschungszentrum der Helmholtz-Gemeinschaft**



DESY 13-181  
TU-948  
ICRR-661-2013-10  
IPMU13-0197  
arXiv:1310.1774  
October 2013

**Axions as Hot and Cold Dark Matter**

K. S. Jeong

*Deutsches Elektronen-Synchrotron DESY, Hamburg*

M. Kawasaki

*Institute for Cosmic Ray Research, University of Tokyo, Kashiwa, Japan*  
*and*

*Kavli IPMU, TODIAS, University of Tokyo, Kashiwa, Japan*

F. Takahashi

*Department of Physics, Tohoku University, Sendai, Japan*  
*and*

*Kavli IPMU, TODIAS, University of Tokyo, Kashiwa, Japan*

ISSN 0418-9833

**NOTKESTRASSE 85 - 22607 HAMBURG**