Charged Einstein-aether black holes and Smarr formula[1] CHIKUN
DING, Hunan University of Humanities, Science and Technology and, Baylor University, ANZHONG WANG, XINWEN WANG, Baylor University, GCAP-CASPER
TEAM — In the framework of the Einstein-Maxwell-aether theory, we present two
new classes of exact charged black hole solutions, which are asymptotically flat and
possess the universal as well as Killing horizons. We also construct the Smarr formulas, and calculate the temperatures of the horizons, using the Smarr mass-area
relation. We find that, in contrast to the neutral case, such obtained temperature
is not proportional to its surface gravity at any of the two kinds of the horizons.
Einstein-Maxwell-aether black holes with the cosmological constant and their topological cousins are also given.

Chikun Ding
Hunan University of Humanities, Science and Technology and, Baylor University