

## High-Quality Axions in a Class of Chiral $U(1)$ Gauge Theories

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We show that there are many candidates for the quintessence and/or the QCD axions in a class of chiral  $U(1)$  gauge theories. Their qualities are high enough to serve as the dark energy and/or to solve the strong CP problem. Interestingly, the high quality of axion is guaranteed by the gauged  $U(1)$  and  $Z_{2N}$  symmetries and hence free from the non-perturbative quantum gravity corrections. Furthermore, our mechanism can be easily applied to the Fuzzy dark matter axion scenarios.

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