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Creating stable Floquet-Weyl semimetals by laser-driving of 3D Dirac materials

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Periodic driving of many-body systems offers a platform to design Floquet states of matter with tunable electronic properties on ultrafast time scales. Here we show by first principles calculations how femtosecond laser pulses with circularly polarized light can be used to switch between Weyl semimetal, Dirac semimetal, and topological insulator states in a prototypical 3D Dirac material, Na3Bi.

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