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**Ground state of interlayer Josephson vortex systems:
General description based on energy landscape** YOSHIHIKO
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tional Institute for Materials Science, Tsukuba, Ibaraki 305-0047, Japan
— Although Josephson vortex systems have been intensively studied,
their phase diagrams have not been established yet even in the ground
state. In the present study, we draw the full energy landscape with re-
spect to magnetic field and the displacement from aligned vortex lattices
by neglecting the spatial variation in the amplitude of superconductiv-
ity order parameter and in the gauge field in the Lawrence-Doniach
model. We find that the ground state changes continuously from the
aligned lattice to sheared lattices, and then to rotated lattices as the
magnetic field decreases, and that rotated lattices are characterized by
multi-valley structures of the energy landscape. Owing to effects of the
underlying layer structures, the rotated vortex lattices realized at the
valleys of the energy landscape are distorted from the rigid ones ex-
pected from the picture based on the London model, and this distortion
becomes weak as the magnetic field decreases. We would like to thank
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