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The Lattice Expansion Effect on the Electronic Structure on MgB_2 EBRU GUNGOR, Hacettepe University, Ankara, Turkey, ENGIN OZDAS, Hacettepe University, Ankara, Turkey — For the metal intercalated boron phases, the electronic band structure calculations showed that both of the density of states (DOS) near the Fermi level and superconducting transition temperature (T_C) of MgB_2 are extremely sensitive to the volume of the unit cell. Especially, decrease of DOS and T_C of the material under the pressure reveals that the intercalation of a larger cations could increase the unit cell volume, consequently enhances the DOS and the superconducting transition temperature. In this work, it was aimed to study the effect of lattice expansion on the electronic structure of MgB_2 and how the band structure, DOS and superconducting transition temperature change with the increase of c-parameter in the frame of BCS theory are discussed.

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