

This paper investigates using the FEMLAB software modules in calculating the electromagnetic fields generated in the vicinity of High Voltage (HV) power transmission lines. The analysis presented in this paper is divided into two main parts. The first part investigates the effectiveness of using the electrostatic and magnetostatic modules of the FEMLAB software in calculating the generated electromagnetic fields in the vicinity of transmission lines. While the second part simulate and calculate the generated electromagnetic fields in the medium surrounding a selected double-circuit, three-phase 132 kV transmission line configuration. The presented results in this paper demonstrate the effectiveness of using FEMLAB in electromagnetic fields calculation in the vicinity of power transmission lines.