task_76ksbc114ylxftfl_with_calculation

Student Group

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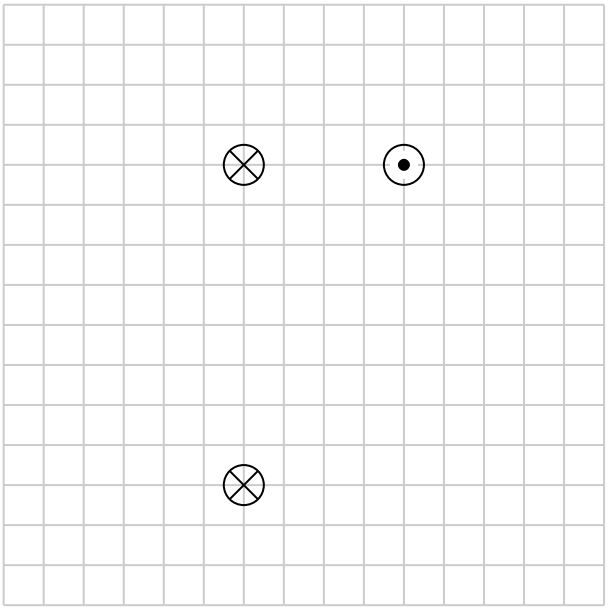
magnetostatic, field lines, exam ee2 SS2021

Exercise E1 Resistance of a Wire by Resistivity
(written test, approx. 6 % of a 60-minute written test, WS2022)

Several parallel conductors are projecting out of the plane.
The same current $|I|$ flows through all the conductors in different directions (see image below).
Sketch at least 10 field lines of the magnetic field strength $\vec{H}$ in such a way that the different properties of the field lines (e.g. direction and density) can be seen.



Result

- high density of field lines near the conductors
- direction of the field lines given by the right-hand rule
- magnetic field has closed field lines
- resulting field given by superposition of field lines