

Seminář oddělení magnetik a supravodičů

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Electron spin resonance at extra-high frequencies and low temperatures. Technique and research

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The technique and installation for Electron Spin Resonance (ESR) experiments at extra high frequencies $f = 5 - 120$ GHz, static magnetic fields up to $H = 7$ T and very low temperatures (up to $T = 0.3$ K) are presented. Analysis of experimental ESR/FMR research of some kind of magnetic structures (namely – Co-nanoelements, structured ferrites [1], manganite-perovskite structures [2], etc.) will be given. Besides, physical phenomena, which take place in magnets, possessing well-controlled ESR-features are under discussion. Namely, Sr-doped manganite-perovskites ($\text{La}_x\text{-Sr}_{1-x}\text{MnO}_3$) with double exchange interaction will be analyzed as left-handed metamaterials.

References

- [1] Vakula A. S., Belous A. G., Kalmykova T. V., Petrushenko S. I., Sukhov V. N., Tarapov S. I., Telecommunications and Radio Engineering **77** (2018), 257-262.
- [2] Kalmykova T., Vakula A., Nedukh S., Tarapov S., Belous A., Krivoruchko V., Suhov R., Functional Materials **25** (2018), 241-245.