Categorical topology and homotopy theory

Jiří Rosický

Reflective subcategories, factorization systems and orthogonality are traditional topics of Categorical Topology. The talk will advertise less traditional but very important topics of weak reflectivity, weak factorization systems and injectivity. The reason is that they are basic ingredients of abstract homotopy theory formalized via Quillen model categories. The emphasis will be on cofibrantly generated and combinatorial model categories, their mutual relations and their appearence in topological spaces.

REFERENCES

[1] J. Adámek, H. Herrlich, J. Rosický and W. Tholen, *Weak factorization systems and topological functors*, Appl. Cat. Struct. 10 (2002) 237–249.

[2] L. Fajstrup and J. Rosický, *A convenient category for directed homotopy*, Th. Appl. Cat. 21 (2008) 7–20.

[3] G. Raptis, *On the cofibrant generation of model categories*, J. Homot. Rel. Struct. 4 (2009) 245–253.

[4] J. Rosický, *On combinatorial model categories*, Appl. Cat. Struct. 17 (2009) 303–316.

[5] J. Rosický, *Are all cofibrantly generated model categories combinatorial?*, Cah. Top. Géom. Diff. Cat. (to appear).