

*On the maximal regular ideal of  $\mathcal{R}L$*

By a *regular ideal* of a ring we mean an ideal which is a Von Neumann regular ring. In [1], Brown and McCoy show that in any ring  $R$  the sum of regular ideals is a regular ideal, and thus  $R$  has a maximal regular ideal. In the talk, I will show that the maximal regular ideal of  $\mathcal{R}L$  (the ring of continuous real functions on a completely regular frame  $L$ ) consists precisely of the functions  $\alpha$  such that the open sublocale  $\sigma(\text{coz } \alpha)$  of  $L$  is clopen and is a  $P$ -frame. I will also give a characterization of this ideal in terms of the notion of the localic remainder that is studied in detail in [2].

**References**

- [1] B. Brown and N. McCoy, The maximal regular ideal of a ring, *Proc. Amer. Math. Soc.* 1 (1950) 165–171.
- [2] M. J. Ferreira, J. Picado and S. M. Pinto, Remainders in pointfree topology, *Topology Appl.* 245 (2018) 21–45.