

# Contracting maximal ideals in rings of continuous functions

T. Dube

University of South Africa

*dubeta@unisa.ac.za*

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A subspace  $S$  of a Tychonoff space  $X$  is said to be  $C_1$ -embedded (see [2]) if whenever  $Z$  is a zero-set of  $X$  and  $W$  a zero-set of  $S$  disjoint from  $Z$ , then  $Z$  and  $W$  are completely separated in  $X$ . We extend this notion to the pointfree context, and then, by observing that  $S$  is  $C_1$ -embedded in  $X$  iff the frame homomorphism  $\mathfrak{O}X \rightarrow \mathfrak{O}S$ , induced by the subspace inclusion  $S \hookrightarrow X$ , is a  $W$ -map in the sense of [1], we show that  $S$  is  $C_1$ -embedded in  $X$  iff the ring homomorphism  $C(X) \rightarrow C(S)$ , given by  $f \mapsto f|_S$ , contracts maximal ideals to maximal ideals.

## References

- [1] T. Dube, *Contracting the socle in rings of continuous functions*, Rendiconti del Semin. Mat. dell'Universit di Padova, (to appear).
- [2] T. Ishii and H. Ohta, *Generalizations of  $C$ -embedding and their applications*, Math. Japonica 23(4) 1978, 349 – 368.