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BASIC QUASI-PROXIMITIES, GRILLS AND COMPACTIFICATIONS

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ABSTRACT. In this paper we make a study of nonsymmetric basic proximity structures defined by ignoring the symmetry axiom from the definition of basic proximities given in Čech [1]. They have been used to construct a type of compactification of D_0-closure spaces.

1. Introduction. Pervin [**14**] introduced the concept of quasi-proximities in 1963. He defined quasi-proximities by ignoring the symmetry axiom from the definition of classical proximities (EF-proximities) defined by Efremovič [**4**]. Steiner [**15**] has proved that there is a quasi-proximity as defined by Pervin, compatible with each topological space. Gastl [**6**] has also investigated quasi-proximities as defined by Pervin [**14**].

Mattson [**11**] has investigated nonsymmetric proximities, which are defined by including distributive properties in addition to what has been defined by Pervin [**14**]. This type of nonsymmetric proximities have also been studied by E.P. Lane [**8**], Singal and Sunder Lal [**17**] among others.

After the introduction of Efremovič proximities, extensive investigations to generalize the theory of proximities in different ways have been made by Leader [**9**], Lodato [**10**], Harris [**7**], Gagrat and Naimpally [**5**], Sharma and Naimpally [**16**] Thron and Warren [**22**] and Mozzochi, Gagrat and Naimpally [**12**].

Basic proximities were introduced by Čech [**1**]. It has been shown that the closure operator induced by a basic proximity satisfies a symmetry axiom. Thus one can not expect a basic proximity compatible with an arbitrary closure space.

In this paper, an attempt, parallel to what has been done by Pervin to subsume all topological spaces under proximity-like structures defined by modifying suitably the definition of EF-proximities, has been made to subsume all closure spaces under basic proximity-like structures defined by modifying the definition of basic proximities of Čech. We have introduced the concept of basic quasi-proximities and used the theory of grills to develop the theory in line with what has been done by Thron [**19**] for

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