Jorge Picado Weil uniformities for frames

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Abstract: In pointfree topology, the notion of uniformity in the form of a system of covers was introduced by J. Isbell in [11], and later developed by A. Pultr in [14] and [15]. Another equivalent notion of locale uniformity was given by P. Fletcher and W. Hunsaker in [6], which they called "entourage uniformity".

The purpose of this paper is to formulate and investigate an alternative definition of entourage uniformity which is more likely to the Weil pointed entourage uniformity, since it is expressed in terms of products of locales. We show that our definition is equivalent to the previous ones by proving that our category of Weil uniform frames is isomorphic to the one defined in [6].

Keywords: uniform space, frame, uniform frame, uniform frame homomorphism, *C*-ideal, frame coproduct, entourage, Weil uniform frame, Weil homomorphism **AMS Subject Classification:** 06D20, 54E15, 54E55