Commutative partially ordered monoids will be referred to as *uninorms* in this paper. The aim of this paper is to investigate involutive uninorms:

Definition 1 $\mathcal{U} = \langle X, \circledast, \leq, t, f \rangle$ is called an *involutive FL_e-algebra* if

1. $\mathcal{C} = \langle X, \leq \rangle$ is a poset,

2. $\circledast$ is a uninorm over $\mathcal{C}$ with neutral element t,

3. for every $x \in X$, $x \to_{\circledast} f = \max\{z \in X \mid x \circledast z \leq f\}$ exists, and

4. for every $x \in X$, we have $(x \to_{\circledast} f) \to_{\circledast} f = x$.

We will call $\circledast$ an *involutive uninorm.* Our main question is the following: in an involutive FL_e-algebra, how far its uninorm (or its algebraic structure, in general) is determined by its "local behavior", i.e., its underlying t-norm and t-conorm. An answer to this question is presented in Section 4, for a particular case on $[0,1]$ with $t = f$, which will illustrate our background idea. It says that the uninorm is determined uniquely by any of them, i.e., either by the t-norm or by the t-conorm. In fact, the t-norm and the t-conorm are determined by each other, in this case. Then, a natural question is how far we can extend this, and when the uninorm is determined uniquely? The main goal of the present paper is to give an answer to this question. The first attempts in this direction are made in Section 3: uniqueness is guaranteed (Corollary 4) and moreover, the uninorm is represented by the twin-rotation construction (Corollary 6) whenever the algebra is conic. To have a closer look at the situation, in Section 3 we consider involutive FL_e-algebras which are finite and linearly ordered. As a byproduct it follows that the logic **IUL** extended by the axiom $\mathbf{t} \leftrightarrow \mathbf{f}$ does not have the finite model property (Corollary 4).