1078-06-331 **Peter Jipsen*** (jipsen@chapman.edu), Chapman University, Mathematics, School of Computational Sciences, Von Neumann Hall, 545 W. Palm Ave, Orange, CA 92866, and **Michael A. Moshier**. *A category of contexts dual to complete semilattices with applications to (algebraic) lattices.*

Formal concept analysis represents complete lattices by *contexts*, i.e. triples $X = (X_-, I, X_+)$ such that $I \subseteq X_- \times X_+$ is a binary relation, called the *incidence relation*. While various notions of morphisms have been defined for contexts, we focus on a recent development by M. A. Moshier [1] where a morphism R from X to Y is a binary relation $R \subseteq X_- \times Y_+$ that satisfies a natural compatibility condition. In this setting the category **Cxt** of *all* contexts is dual to the category **INF** of complete meet-semilattices with completely meet-preserving homomorphisms. We show that the notions of epimorphism, monomorphism and isomorphism have a very simple form in **Cxt**, and we characterize the (non-full) subcategories dual to complete lattices with complete lattice homomorphisms and algebraic lattices with morphisms that preserve arbitrary meets and directed joins. We also discuss the relationship of these dualities with the dualities for lattices by A. Urquhart and by G. Hartung.

[1] M. A. Moshier, A relational category of formal contexts, preprint. (Received December 12, 2011)