Let C be a site, $C^\wedge$ the category of presheaves on C and $C^\sim$ the category of sheaves on C.

It is well known that the inclusion functor $i : C^\sim \to C^\wedge$ has a left adjoint fonctor $a : C^\wedge \to C^\sim$, which is called the sheafification functor. The functor a is defined by $a = L^2$ where $L : C^\wedge \to C^\sim$ is a functor which assigns a separated presheaf to each presheaf.

On the other hand, the existence of a left adjoint of the inclusion functor i can be considered as an orthogonal subcategory problem in general category theory. From this point of view, the left adjoint is constructed using a certain functor $\Delta : C^\wedge \to C^\wedge$.

In this talk, we study the relation between these two constructions and show that the two functors L and Δ are naturally isomorphic.