1014-68-1716   **Carlos C Martinez*** (`cmartinez@wesleyan.edu`), 178-60 Wexford Terrace, Apt. 2E, Jamaica, NY 11432. *Type Isomorphims and Program Isomorphisms.* Preliminary report.

The paradigm of functional programming has branched off from type theory and lambda calculus. However, the latter offer a starting point for analyzing issues concerning design of functional programming languages, spanning efficiency and expressiveness as well as addressing decision problems within their convertibility relations. A novel idea in the lambda calculus is the notion of *type isomorphism*: Two types A, B are isomorphic if and only if there is an invertible program F such that $A =_F B$. Similarly, we make the following definition; two programs P, Q are *program isomorphic* if and only if there is an invertible program F such that $FP = Q$. We will explain how these relations provide lenient congruence relations on types and programs; specifically, they provide a suitable framework for *program transformations*. (Received September 28, 2005)