1072-20-199 **Gabriel Zapata*** (nyzapata@gmail.com), New York, NY 10016. *Naturality in Public-Key Cryptography.* Preliminary report.

Practical public-key cryptosystems rely on the commutativity of their platforms. The commutative platform induces protocols that are designed to utilize the commutative property. On the other hand, theoretical non-commutative public-key cryptography aims at avoiding the dependence in the commutativity of the algebraic platform in hopes of developing protocols that are also free from commutativity. However, the protocol suggested by Anshel, M. Anshel and D. Goldfeld, et al., is the only known protocol to successfully avoid commutativity in both the platform and in the theoretical construction of the protocol. Here we develop a general method of choosing a non-commutative platform that avoids commutativity in the design of the protocol and that differs from the Anshel, M. Anshel Goldfeld scheme as well. (Received June 27, 2011)