1067-86-1669   **Beyza C Aslan*** (`beyza.aslan@unf.edu`), University of North Florida, Dept. of Math & Stat, 1 UNF Drive, Bldg 14/2731, Jacksonville, FL 32224, and **William Hager**. *Mathematical Methods for Modeling of Lightning and Thunderstorm Electrification.*

In climate change research and other areas concerning weather, lightning and the gases and energy it produces is a big interest. To be able to have better estimates related to anything lightning produces, one needs to understand lightning better. In our work, we try to accomplish two goals: Modeling the electric potential in the cloud and computing the charge density deposited by a flash. These two parameters are the two most important parameters in computing the lightning flash energy, which in turn provides other helpful information about lightning as well. In this talk, I will briefly discuss the mathematical methods we use to achieve these goals, and present some applications. (Received September 21, 2010)