1100-30-332   **Jacob S Makaya*** (`jac.makaya@ttu.edu`), Department of Mathematics and Statistics, Broadway and Boston, Lubbock, TX 79409, and **Alexander Yu Solynin** (`alex.solynin@ttu.edu`), Department of Mathematics and Statistics, Broadway and Boston, Lubbock, TX 79409. *Bubbles in the Channel: Complex Potentials and Quadratic Differentials.* Preliminary report.

We will discuss some properties of static and steady state bubbles in a channel filled with incompressible fluid. First, we explain how the theory of quadratic differentials can be used to study the fluid flow and evolution of bubbles in the channel. Then we will use complex potentials and properties of trajectory structure of quadratic differentials to decide when the flow is directed, conservative, with or without critical points inside the fluid domain. Some geometric characteristics of steady state bubbles also will be discussed. (Received February 10, 2014)