1135-81-1845 **Minhae Park*** (minhae.pak@gmail.com), A323, Science Building A, 52, Ewhayeodae-gil. Seodaemun-gu, Seoul, 03760, South Korea, and **Hyun Kyu Kim** (hyunkyukim@ewha.ac.kr), A323, Science Building A, 52, Ewhayeodae-gil. Seodaemun-gu, Seoul, 03760, South Korea.

Operator Quantization of Non-Regular Flips on Teichmüller Space. Preliminary report.

The phase space of the 2+1 dimensional pure gravity in physics can be described in terms of Teichmüller space. Quantization of Teichmüller space T(S) of punctured Riemann surface S has been established by Kashaev and by Chekhov-Fock, which draws the possibility of solving 2+1 quantum gravity. For this, one chooses a triangulation of S by edges running between punctures. Each edge yields a nice coordinate function on T(S), and the quantization process first deforms the algebra generated by these coordinate functions to a non-commutative algebra, which in turn is realized as an algebra of operators on a Hilbert space. A key point of quantum Teichmüller theory is, per each change of triangulations, to build a unitary map between the Hilbert spaces relating the quantum coordinate operators in a consistent manner. In the literature, such a unitary map is built for each 'flip', which is a change of triangulations that alters only one edge. However, a flip involving triangles with two edges identified has not been fully dealt with, and we construct unitary operator for such 'non-regular' flips, filling a missing gap of quantum Teichmüller theory. (Received September 26, 2017)