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Imran Anwar* (imrananwar@sms.edu.pk), 68 B New Muslim Town, LAHORE, Punjab 5400000, Pakistan. *GALLAI-SIMPLICIAL COMPLEXES*. Preliminary report.

In this talk, we discuss the newly introduced concept of Gallai-simplicial complex $\Delta_\Gamma(G)$ of a finite simple graph G . We will describe, how we use the concept of Gallai graph $\Gamma(G)$ of a planar graph G to introduce the Gallai-simplicial complex $\Delta_\Gamma(G)$. The buildup of Gallai-simplicial complexes from a planar graph is an abstract idea, somehow, similar to building an origami shape from a plane sheet of paper by defining a crease pattern. We will discuss the Cohen-Macaulayness of Stanley-Reisner ring of a Gallai simplicial complex associated to certain graphs. Moreover, we will discuss the non-pure shellability of Gallai simplicial complexes. (Received July 26, 2016)