Spin liquids of a frustrated SU(3) quantum magnets on a triangular lattice PENG LI, SHUN-QING SHEN, Dept. of Phys., The Univ. of Hong Kong, Pokfulam Road, Hong Kong, China — The spin disorder state of the bilinear-biquadratic model near the edge of antiferromagnetic region on a triangular lattice is studied in a point of view of frustrated SU(3) quantum magnets. A mean field theory in the quasi-particle representation is established. From the quasi-particle spectra, we show that the density-of-states rise linearly from zero in the region where the SU(3) symmetry is broken. As a consequence, the specific heat at low-temperature in this region exhibits the power law, $C \propto T^2$, which may give an explanation for a recent experiment on NiGa2S4. A finite susceptibility is also obtained in the zero temperature limit, which is also in agreement with the experiment.

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