This article is based on a recently proposed Lagrangian approach [1] to the so-called maximally helicity violating (MHV) rules in Yang-Mills theory. Originally the MHV rules are developed in twistor (or supertwistor) space within the framework of twistor string theory. In [1], however, the rules are derived directly from four-dimensional Yang-Mills action, providing an alternative perspective to the recent developments in the computation of gluon scattering amplitudes. The article under review should be understood as a further investigation of this Lagrangian approach to self-dual Yang-Mills theory. Using the light-front quantization, the authors point out that symmetries of the self-dual Yang-Mills theory form an infinite dimensional Lie algebra as in the cases of free theories. The analysis used in the article seems to have some similarities with the analysis in supertwistor space or closely related harmonic superspace.

References

[1] P. Mansfield, JHEP **0603**, 037 (2006) [arXiv:hep-th/0511264].