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Kazuo Yamazaki* (kyamazak@ttu.edu), Texas Tech University, 1108 Memorial Circle, Lubbock, TX 79409-1042. *Strong Feller property of the magnetohydrodynamics system forced by space-time white noise via regularity structures.* Preliminary report.

When a differential equation is forced by a random noise that is white in not only time, but also in space, the solution becomes too rough so that the non-linear term does not make any sense via a classical method. Such equations are called singular PDEs; a prominent example includes the KPZ equations. The theories of paracontrolled calculus and regularity structures are two recent novel methods with which non-trivial limit of approximation scheme may be obtained for such singular PDEs. We consider three-dimensional magnetohydrodynamics system forced by space-time white noise, apply the theory of regularity structures and prove the local well-posedness, as well as the strong Feller property. (Received September 03, 2019)