Removable singularities of solutions of semilinear heat equations

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In 2010, Hsu [1] investigated removable singularities of bounded solutions of semilinear heat equations and of solutions of the heat equation under a suitable growth condition. His proof relied on the integral representation and several estimates of the Green functions for a circular cylinder and for its exterior by explicit functions. After that, Hui [2] gave another proof based on the parabolic Schauder estimate and the maximum principle. However his proof is not applicable to semilinear heat equations.

In this talk, I will discuss removable singularities of solutions of semilinear heat equations under a suitable growth condition, i.e., the extension of their results, and will present a proof based on the parabolic potential theory, particularly Watson's result [3], and an iteration argument.

References

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