The non-perturbative renormalization group approach to KPZ

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Describing the rough phase of the KPZ equation in all dimensions has been a long-standing problem that usual perturbative renormalization group (RG) approaches do not allow us to solve. The Wilsonian and non-perturbative version of the RG does not suffer from the same problems and has indeed allowed us to tackle with the one, two and three dimensional KPZ equations in all phases. After briefly reviewing the main ideas underlying the modern version of Wison's RG, we will show how it can be implemented in the KPZ case and to which results it leads to in terms of critical exponents and scaling functions.