Singular limit of solutions of the porous medium type equation

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In this talk we will discuss some of our recent results on the singular limit of solutions of the porous medium type equations. In particular we will show that as $m \to \infty$ or $p \to \infty$ the solutions of $u_t = \Delta u^m - u^p$, $(x,t) \in R^n \times (0,T)$, $T > 0$, $m > 1$, $p > 1$, $u \geq 0$, $u(x,0) = f(x) \in L^1(R^n) \cap L^\infty(R^n)$ will converge to some function.