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Sharp traveling waves for time-delayed Fisher-KPP type of degenerate diffusion equations

In this talk, we present the existence of critical traveling waves for the time-delayed Fisher-KPP type of degenerate diffusion equations. These waves are continuous sharp waves with sharp corners caused by the degeneracy of diffusion. The monotone reducing mechanism of the critical waves is also proved, that is, the critical wave speed is decreasing in time-delay. A new phase transform approach is introduced to analyze the delicate local and global behaviors of these critical sharp traveling waves.