

Structures of a nonlinear elliptic equation with an A_2 weight and related topics

Yoshitsugu Kabeya (Osaka Prefecture University)

Abstract. We consider a nonlinear elliptic equation of the form

$$\frac{1}{\xi(x)} \operatorname{div}(\xi(x) \nabla u) + V_1(|x|)u + V_2(|x|)u^p = 0 \quad \text{in } \mathbf{R}^N,$$

with positive $\xi(x)$ satisfying the A_2 weight condition and $p > 1$. Under the assumption that the linear part is a subcritical operator, we discuss structures of positive radial solutions and their asymptotic behavior. This talk is based on the joint project with Professors K. Ishige (Univ. Tokyo), E. Yanagida (Tokyo Inst. Tech.) and S. Yotsutani (Ryukoku Univ.).