# Existence of Normalized Ground State Solutions for a Biharmonic Equation in $\mathbb{R}^4$

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## Abstract

In this talk, we discuss the existence of normalized ground state solutions for the following biharmonic equation

$$\begin{cases} \Delta^2 u = \lambda u + \mu |u|^{q-2}u + f(u), & \text{in } \mathbb{R}^4, \\ \int_{\mathbb{R}^4} |u|^2\, dx = a^2, \end{cases}$$

where $a, \mu > 0$, $q > 4$, $\lambda \in \mathbb{R}$ is an unknown parameter that appears as a Lagrange multiplier, and $f$ is a nonlinear function which possesses critical exponential critical growth motivated by Adams inequality. To prove solutions we construct an augmented functional which possesses a type mountain pass geometry.

## References

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