1015-35-92   **Hua Chen*** (`chenhua@whu.edu.cn`), School of Mathematics and Statistics, Wuhan University, 430072 Wuhan, Hubei, Peoples Rep of China. *Aymptotic behavior of the trace for Schrödinger operator on fractal domains.*

Let $\Omega = \bigcup\limits_{m=1}^{\infty} \Omega_m$ be an open subset of $\mathbf{R}^n$ with boundary $\partial\Omega$ and the volume of Ω is finite; Ω_m are bounded and connected open domains with piecewise smooth boundaries, and $\Omega_i \cap \Omega_j = \phi$ if $i \neq j$. In particular, Ω is an open subset with fractal boundaries $\partial\Omega$, which we also say that Ω is a fractal drum.

We consider the following eigenvalue problem of Schrödinger operator

$$\begin{cases} Lu \equiv -\Delta u + q(x)u = \lambda u, & \text{in } \Omega, \\ u = 0, & \text{on } \partial\Omega, \end{cases}$$

where $q(x)$ is a bounded continuous function in Ω. Here we study the first and second term of trace displacement.

(Received January 28, 2006)