

1-tarelka; 2-teshiklar, 3-tirqishlar.
5-rasm. Suyuqlik oqib tushadigan tarelkalar

Panjarali tarelkalar - eni 3...8 mm li tirqishlar yoki frezerlash usulida qilingan bo'ladi (1.8 b-rasm). Teshikli va panjarali tarelkalar konstruksiyasi sodda, narxi arzon, gidravlik qarshiligi nisbatan kichik va montaj qilish oson. Teshikli va panjarali tarelkalar konstruksiyasi soddaligi, metall sarfi kamligi, montaj osonligi va kichik gidravlik qarshiligi bilan ajralib turadi.

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IKKI O'LCHAMLI QO'ZG'ALISHLI MODEL OPERATORINING DISKRET SPEKTRI

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Annotatsiya: Ushbu ishida $L_2(T)$ Hilbert fazosida aniqlangan ikki o'lchamli qo'zg'alanishli, chiziqli, chegaralangan va o'z-o'ziga qo'shma $H_{\mu\lambda}$ operator qaralgan. Ishda $H_{\mu\lambda}$ operatorning muhim spektrdan chapda va o'ngda faqat bitta yoki ikkita xos qiymatga ega ekanligi operatorning parametrlariga bog'liq ravishda o'rganilgan.

Kalit so'zlar: Operator, tor, spektr, Veyl teoremasi, Hilbert fazosi.

$T = (-\pi; \pi]$ — bir o'lchamli tor bo'lsin. $L_2(T)$ kvadrati bilan integrallanuvchi funksiyalarning Hilbert fazosi bo'lsin. $L_2(T)$ Hilbert fazosida aniqlangan quydagi operatorni qaraymiz:

$$H_{\mu\lambda} = H_0 - \mu V_1 - \lambda V_2, \quad \mu, \lambda \in R \quad (2.1)$$

Bu yerda $H_0 - L_2(T)$ fazoda $\cos x$ funksiyaga ko'paytirish operatori, V_1 va V_2 lar esa $L_2(T)$ fazoda integral operatorlar, ya'ni

$$H_0 f = \cos x f(x)$$

$$V_1 f = \int_{-\pi}^{\pi} f(y) dy, \quad V_2 f = \cos x \int_{-\pi}^{\pi} \cos y f(y) dy$$

Malumki, V_1, V_2 operatorlar kompakt operatorlar bo'lib, muhim spektrning turg'unligi haqidagi Veyl teoremasiga ko'ra $H_{\mu\lambda}$ ning muhim spektri uchun quyidagi tenglik o'rinli

$$\sigma_{ess}(H_{\mu\lambda}) = \sigma_{ess}(H_0) = \sigma(H_0) = [-1; 1].$$

Quyidagi to'plamlarni kiritamiz.

$$G_1 = \{ (\mu, \lambda) \in R_+^2 \quad 2\sqrt{2}\pi^2\mu\lambda - \sqrt{2}\pi\mu - \sqrt{2}\pi\lambda > 0 \}$$

$$G_2 = \{ (\mu, \lambda) \in R_+^2 \quad 2\sqrt{2}\pi^2\mu\lambda - \sqrt{2}\pi\mu - \sqrt{2}\pi\lambda < 0 \}$$

$$G_3 = \{ (\mu, \lambda) \in R_+^2 \quad 2\sqrt{2}\pi^2\mu\lambda - \sqrt{2}\pi\mu - \sqrt{2}\pi\lambda = 0 \}$$

$$G_1^* = \{ (\mu, \lambda) \in R_-^2 \quad -2\sqrt{2}\pi^2\mu\lambda - \sqrt{2}\pi\mu - \sqrt{2}\pi\lambda > 0 \}$$

$$G_2^* = \{ (\mu, \lambda) \in R_-^2 \quad -2\sqrt{2}\pi^2\mu\lambda - \sqrt{2}\pi\mu - \sqrt{2}\pi\lambda > 0 \}$$

$$G_3^* = \{ (\mu, \lambda) \in R_-^2 \quad -2\sqrt{2}\pi^2\mu\lambda - \sqrt{2}\pi\mu - \sqrt{2}\pi\lambda > 0 \}$$

Endi $H_{\mu\lambda}$ operatorning xos qiymatlari uchun o'rinli bo'lgan quyidagi teoremani keltiramiz.

Teorema 1. Quyidagi tasdiqlar o'rinli:

a). Agar $(\mu, \lambda) \in G_1$ bo'lsin. U holda $H_{\mu\lambda}$ operator -1 dan chapda 2 ta xos qiymatga ega va bu xos qiymatlar uchun quyidagi tengsizliklar o'rinli

$$z_1(\mu, \lambda) < \delta_1(\mu, \lambda) < \delta_2(\mu, \lambda) < z_2(\mu, \lambda) < -1$$

tengsizlik o'rinli bo'ladi. Bunda

$$\delta_1(\mu, \lambda) = \min_{\mu\lambda} \{E_1(\mu), E_2(\lambda)\}, \quad \delta_2(\mu, \lambda) = \max_{\mu\lambda} \{E_1(\mu), E_2(\lambda)\}$$

b). Agar $(\mu, \lambda) \in G_2 \cup G_3$ bo'lsa, u holda $H_{\mu\lambda}$ operator -1 dan chapda yagona $E(\mu, \lambda)$ xos qiymatga ega.

c). Agar $(\mu, \lambda) \in G_1^*$ bo'lsin. U holda $H_{\mu\lambda}$ operator 1 dan o'ngda 2 ta xos qiymatga ega va bu xos qiymatlar uchun quyidagi tengsizliklar o'rinli

$$1 < z_1(\mu, \lambda) < \theta_1(\mu, \lambda) < \theta_2(\mu, \lambda) < z_2(\mu, \lambda)$$

tengsizliklar o'rinli bo'ladi. Bunda

$$\theta_1(\mu, \lambda) = \min_{\mu\lambda} \{E_1^*(\mu), E_2^*(\lambda)\}, \quad \theta_2(\mu, \lambda) = \max_{\mu\lambda} \{E_1^*(\mu), E_2^*(\lambda)\}$$

d). Agar $(\mu, \lambda) \in G_2^* \cup G_3^*$ bo'lsa, u holda $H_{\mu\lambda}$ operator 1 dan o'ngda yagona $E(\mu, \lambda)$ xos qiymatga ega.

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GAZLARNI TOZALASHDA INNOVATSION USUL VA APPARATNING SAMARADORLIGI

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Annotatsiya: Maqolada, gazlarni ho'l usulda toazlovchi rotor-filtrli apparatda o'tkazilgan tajribaviy tadqiqotlarda olingan ma'lumotlar berilgan. Tajriba natijalariga