

$$5) \tilde{\bar{D}_4} = x_1 + \frac{1}{n-1} \sum_{i=2}^n x_i$$

$$\begin{aligned} M\tilde{\bar{D}_4} &= Mx_1 + \frac{1}{n-1} \sum_{i=2}^n x_i = Mg + \frac{1}{n-1} \sum_{i=2}^n Mg = \\ &= \frac{Q}{2} + \frac{Q}{2} = Q \Rightarrow \boxed{\tilde{\bar{D}_4} - \text{нестацин}} \end{aligned}$$

$$\begin{aligned} D\tilde{\bar{D}_4} &= Dg + \frac{1}{(n-1)^2} \sum_{i=2}^n Dg = \frac{Q^2}{12} + \frac{1}{n-1} \cdot \frac{Q^2}{12} = \\ &= \frac{Q^2}{12} \left( \frac{n}{n-1} \right) \xrightarrow[n \rightarrow \infty]{} 0 \quad \text{пост. уст. не выполн.} \end{aligned}$$

$$x_1 + \frac{1}{n-1} \sum_{i=2}^n x_i$$

$$\begin{array}{c|c} \xi^n \xrightarrow{P} \xi & \xi^n + \eta^n \xrightarrow{P} \xi + \eta \\ \eta^n \xrightarrow{P} \eta & \xi_n \eta_n \xrightarrow{P} \xi \eta \\ \hline x_1 \xrightarrow{P} g & \end{array}$$

Исп. ЗБЧ Хинчина:  $\{\xi_n\}$  - независ, равномер.

$$\exists Mg \Rightarrow \frac{1}{n} \sum_{i=1}^n \xi_i \xrightarrow{P} Mg$$

$$\Rightarrow \frac{1}{n-1} \sum_{i=1}^n x_i \xrightarrow{P} \frac{Q}{2}$$

$$\Rightarrow \tilde{\bar{D}_4} \xrightarrow{P} g + \frac{Q}{2} \Rightarrow \boxed{\text{не собл. } \tilde{\bar{D}_4} \text{ симметр.}}$$

②  $\tilde{\bar{D}_2} \times \tilde{\bar{D}_4} \rightarrow$  несобл

Состоит. собл только  $\tilde{\bar{D}_1} + \tilde{\bar{D}_3}'$

$$D\tilde{\bar{D}_1} = \frac{Q^2}{3n} = D_1$$

$$D\tilde{\bar{D}_3}' = \frac{Q^2}{n(n+2)} = D_3$$

$$\begin{aligned} D_3 - D_1 &\neq n \\ \Rightarrow \frac{D_3 - D_1}{\tilde{\bar{D}_3}'} &\text{ более эффектив} \\ \text{чем } \tilde{\bar{D}_1} & \end{aligned}$$