

Таблица 2

Показатели качества и некачества электрической энергии для одной фазы групповых структур с отрезфазными  $i$ -ми ТРПН

| Способ рег.<br>Параметр      | Рисунок 1, $a$                                                                                                                                                                                                                                                                                                                                              | Рисунок 1, $b$ | Рисунок 1, $в$                                                                                                                                                                                                             | Рисунок 1, $г$                                                                                                                                                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\kappa_{c\Sigma}$           | $\sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right) \Bigg/ \left\{ \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right) \right]^2 + \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \sin^2 \alpha_i \right]^2 \right\}^{1/2}$                                             |                | 1                                                                                                                                                                                                                          | 1                                                                                                                                                                                                                                  |
| $\kappa_{u\Sigma}$           | $\frac{1}{\bar{I}_{1\Sigma}} \left\{ \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right) \right]^2 + \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \sin^2 \alpha_i \right]^2 \right\}^{1/2}$                                                                                                                     |                | $\frac{1}{\bar{I}_{1\Sigma}} \sum_{i=1}^n \frac{\kappa_i}{\pi} (\lambda_i + \sin \lambda_i)$                                                                                                                               | $\frac{1}{\bar{I}_{1\Sigma}} \sum_{i=1}^n \frac{\kappa_i}{\pi} (\pi - \alpha_i - \sin \alpha_i)$                                                                                                                                   |
| $\kappa_{\mathcal{M}\Sigma}$ | $\frac{1}{\bar{I}_{1\Sigma}} \sum_{i=1}^n \frac{\kappa_i}{\pi} (\pi - \alpha_i + \sin 2\alpha_i)$                                                                                                                                                                                                                                                           |                | $\frac{1}{\bar{I}_{1\Sigma}} \sum_{i=1}^n \frac{\kappa_i}{\pi} (\lambda_i + \sin \lambda_i)$                                                                                                                               | $\frac{1}{\bar{I}_{1\Sigma}} \sum_{i=1}^n \frac{\kappa_i}{\pi} (\pi - \alpha_i - \sin \alpha_i)$                                                                                                                                   |
| $v_{c\Sigma}$                | $\sum_{i=1}^n \frac{\kappa_i}{\pi} \sin^2 \alpha_i \Bigg/ \sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right)$                                                                                                                                                                                                     |                | 0                                                                                                                                                                                                                          | 0                                                                                                                                                                                                                                  |
| $v_{u\Sigma}$                | $\left\{ \bar{I}_{1\Sigma}^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right) \right]^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \sin^2 \alpha_i \right]^2 \right\}^{1/2} \times$<br>$\times \frac{1}{\sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right)}$ |                | $\left\{ \bar{I}_{1\Sigma}^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} (\lambda_i + \sin \lambda_i) \right]^2 \right\}^{1/2} \times$<br>$\times \frac{1}{\sum_{i=1}^n \frac{\kappa_i}{\pi} (\lambda_i + \sin \lambda_i)}$ | $\left\{ \bar{I}_{1\Sigma}^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} (\pi - \alpha_i - \sin \alpha_i) \right]^2 \right\}^{1/2} \times$<br>$\times \frac{1}{\sum_{i=1}^n \frac{\kappa_i}{\pi} (\pi - \alpha_i - \sin \alpha_i)}$ |
| $v_{\Sigma}$                 | $\frac{\bar{I}_{1\Sigma}}{\sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right)}$                                                                                                                                                                                                                                    |                | $\frac{\bar{I}_{1\Sigma}}{\sum_{i=1}^n \frac{\kappa_i}{\pi} (\lambda_i + \sin \lambda_i)}$                                                                                                                                 | $\frac{\bar{I}_{1\Sigma}}{\sum_{i=1}^n \frac{\kappa_i}{\pi} (\pi - \alpha_i - \sin \alpha_i)}$                                                                                                                                     |
| $v_{Q\Sigma}$                | $\frac{\sum_{i=1}^n \frac{\kappa_i}{\pi} \sin^2 \alpha_i}{\bar{I}_{1\Sigma}}$                                                                                                                                                                                                                                                                               |                | 0                                                                                                                                                                                                                          | 0                                                                                                                                                                                                                                  |
| $v_{pu\Sigma}$               | $\frac{1}{\bar{I}_{1\Sigma}} \left\{ \bar{I}_{1\Sigma}^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \left( \pi - \alpha_i + \frac{1}{2} \sin 2\alpha_i \right) \right]^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} \sin^2 \alpha_i \right]^2 \right\}^{1/2}$                                                                                               |                | $\frac{1}{\bar{I}_{1\Sigma}} \left\{ \bar{I}_{1\Sigma}^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} (\lambda_i + \sin \lambda_i) \right]^2 \right\}^{1/2}$                                                                 | $\frac{1}{\bar{I}_{1\Sigma}} \left\{ \bar{I}_{1\Sigma}^2 - \left[ \sum_{i=1}^n \frac{\kappa_i}{\pi} (\pi - \alpha_i - \sin \alpha_i) \right]^2 \right\}^{1/2}$                                                                     |