**Table 5** Formula errors comparison (*Sa* is the settling velocity criterion; *Φ* is the particle size criterion; *θ* is the separation angle; Sum of square errors: ;Sum of logarithmic deviations: ).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Formula | Average relative error | Sum of squared errors | Sum of logarithmic deviations | R2 |
| Prediction formula |  | 0.2533 | 108.1657 | 36.6583 | 0.8145 |
| Gangchalov | ； | 0.0054 | 619.8922 | 53.6037 | 0.7076 |
| Allen | ； | 0.7351 | 302.1722 | 83.0291 | 0.6996 |
| Yuqing Sha  |  | 1.2860 | 639.4830 | 142.7019 | 0.7017 |
| Ruijin Zhang  |  | 0.8537 | 4132.665 | 102.0209 | 0.6689 |
| Guoren Dou  |  | 0.3442 | 317.3214 | 74.75413 | 0.6330 |