Table The numerical comparison of the attitude

|  |  |  |
| --- | --- | --- |
| Method | Errors(degrees) | Times(s) |
| ”top-down” with ULNet | (5.2, 4.8, 4.5) | 0.54 |
| ”bottom-up” with UNet | (4.4, 4.2, 3.8) | 1.20 |
| ”bottom-up” with ULNet | (1.2, 1.0, 0.5) | 1.26 |

Table The numerical comparison of the attitude

|  |  |  |
| --- | --- | --- |
| Method | Errors(degrees) | Times(s) |
| ”top-down” with ULNet | (6.0, 5.8, 5.5) | 0.60 |
| ”bottom-up” with UNet | (4.9, 5.5, 4.9) | 1.16 |
| ”bottom-up” with ULNet | (1.3, 1.6, 1.0) | 1.19 |

Table The estimation errors of different imaging

|  |  |
| --- | --- |
| Image Resolution | Error(degrees) |
| Origin resolution | (1.2, 1.0, 0.5) |
| 0.06-m resolution | (2.2, 2.4, 1.9) |
| 0.07-m resolution | (3.0, 2.9, 2.3) |