**Tab. 1** Earth-moon space constants (He & Shen 2020)

|  |  |  |  |
| --- | --- | --- | --- |
| Symbol | Value | Units | Meaning |
|  | 1.21506683×10-2 | - | Earth-moon mass ratio |
|  | 1 | m | Earth - moon distance unit |
|  | 1 | s-1 | Earth - moon angular velocity unit |
|  | 6378 | km | Mean earth’s radius |
|  | 1738 | km | Mean moon’s radius |
|  | 3.84405000×108 | m | Distance unit |
|  | 4.34811305 | days | Time unit |
|  | 1.02323281×103 | m s-1 | Speed unit |

**Tab. 2** Earth-moon space constants

|  |  |  |  |
| --- | --- | --- | --- |
| Computing orbit elements | | Results of Poincaré-section map | |
| Symbol | Value/Units | Symbol | Value/Units |
|  | 6545 /km |  | [0.9926,0.9975] /DU |
|  | [225.1,225.4] /deg |  | [0.3377,0.5615] /VU |
|  | [10.9838,10.985] /km·s-1 |  | [-82.4637,-73.9266] /deg |
|  | 42164 /km |  | [0.9928, 0.9976] /DU |
|  | [126.5,127.3]/deg |  | [0.3190,0.6998] /VU |
|  | [4.1261,4.1271] /km·s-1 |  | [-81.4566,-74.6909] /deg |

**Tab. 3** The values of the transfer’s design variables with the highest perilune altitude

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables/Units | /deg | /km·s-1 | /deg | /km·s-1 |
| Values | 225.280236 | 10.983999 | 126.796756 | 4.126486 |