Conclusions

- According to the research, a reasonable range for the value of the harmony considering rate (HMCR) is proposed at 0.6–0.8; the value of the pitch adjusting rate (PAR) is set from 0.3 to 0.5. The conclusions are of significance in solving the problem of engineering optimization.
- For the general HS algorithm, the new harm an memory size (NHMS) must be set as a new parameter in an improved program. The conclurum shows that the parameter value should be set appropriately in accordance with the value of the harmony memory size (HMS) as well as the complexity of engineering optimization problems in practice.
- From the perspective of engineering application, the conclusion reveals that ability of distinction and viscolization. Darameter identification is significantly affected by the eigenvectors selected in the calculation and the distribution of selected points. Because the crane structure operates in a three-dimension space, it is capable of contributing greatly to enhance the ability of distinction and parameter identification if the orientation of the ibration is considered in the calculation.
- The more eigenvectors selected in the calculation, the more sensors are needed in the measurement process to meet the qualification of threshold for the acceptable value.