-1.4713 - 7.7920i
-0.6867 +11.3617i
-0.6867 -11.3617i
-0.2157 + 1.5422i
-0.2157 - 1.5422i
-1.6600 + 8.2602i
-1.6600 - 8.2602i
-1.5831 + 8.2717i
-1.5831 - 8.2717i

The natural frequency is equal to the imaginary part of eigenvalues of the matrix and the real part relates to damping.

The identification of frequencies is solved by simpler models with fewer degrees of freedom and the results are:

1.0363 Hz – frequency of linear oscillations of the sprung masses on z-axis;

1.5422 Hz – frequency of angular oscillation of the sprung masses around x-axis;

0.7344 Hz – frequency of angular oscillation of the sprung masses around y-axis;

7.7920 и 7.8194 Hz – angular frequency of the front arms;

8.2602 и 8.2717 Hz – angular frequency of the rear arms;

12.2936 Hz - frequency of linear oscillations of the power unit on z-axis;

11.3617 Hz - frequency of angular oscillation of the power unit around x-axis;

10.5659 - frequency of angular oscillation of the power unit around y-axis.

Received natural frequencies of the power unit do not coincide with those of other units of the car, but also within the prescribed limits in the table. 1. Therefore, elastic and damping characteristics of the elements are chosen correctly.

4. Conclusion

The model gives us possibility to obtain natural frequencies to whole system. The results of numerical simulation can be considered more reliable because the model takes into account the effects of power unit.

5. Acknowledgement

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