

wheel can be well related and the bearing wheels can adapt rough terrain passively, so the impact vibration has been reduced. As the front wheel track and the rear wheel are connected by rockers, the position of contact point can be adjusted freely, which decreases the difficulty on control system design. And by testing, we can find that the pitching motion of the bodywork around axle Z has been averaged linearly by the differential balance mechanism, so the stability of exploration robot has been improved. Finally, by simulation and testing we find that the acceleration in vertical change in a large range, which means that the impact vibration should be reduced further more and some parameters of the suspension system should be optimized.

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