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# ELECTROMAGNETIC ROCKET LAUNCH SYSTEM

**Abstract**

The principle of this electromagnetic launch system is that a current is supplied through a hollow conductor which houses the rocket. When the current flows through the conductor it induces a magnetic field which acts on the magnet that is linked to the rocket, the magnetism can also be induced by electromagnetism. This leads to a relative forward motion between the stationary conductor and the rocket. Simultaneously, combustion within the rocket is also done but with a very small amount of fuel. This technique will save the fuel, which will reduce weight of the rocket which ultimately leads to a better efficiency. This technology can benefit the environment by setting the origin of the current to be passed through the stator/slider as a renewable resource, such as solar power. The longer the stator, the more fuel is saved by firing less amount of fuel to escape earth's gravity. The entire launch pad will function as a stator of a linear motor whereas the rocket itself will function as a slider of the linear motor. The current applied is in desired direction of rocket launch. With this method, the fuel space in the tank will be saved which will permit larger weight of payload to be sent into space for the same weight. There will also be outlets for the removal of exhaust gases of the rocket from the launcher. Arrangements can also be made by setting up a long track which ends with an angular plane such as in hilly areas or by making an angular structure with the launch vehicle to be flown at hypersonic speeds. Once, the vehicle leaves the track, it will remain in motion because of the momentum it gained during the launch, the engines of the vehicles can be fired when the momentum is about to lose. Hence, instead of occupying a larger fuel space we can actually increase the weight limit for payload to be sent into space which would eventually lead to reduction in launch cost.