

Ion Ray Guns and Force Fields

The ion ray gun utilizes a high potential electrical source emitting charges into the air. These particles can charge up other objects over a distance depending on physical size and insulation above ground. A high potential when terminated to a large object can build up a charge that is equal to the intrinsic capacity x charge voltage ($Q=CV$) where Q is in coulombs, capacity is in Farads and V is in volts. If the termination is a small object such as a point, the charge leaks off and cannot build up. This phenomenon is the result of charge particle density being much higher when crowded into a pointed or small volume. The repulsive forces now enhance the effect. A good example of this is a thunder head being a large object can build up a charge of up to 50 coulombs at a potential of hundreds of millions of volts. When a breakdown does occur this energy ($W=QV$) where W = Joules discharges into the familiar lightning bolt. On the other hand a lightning rod now being a small pointed object can drain some of the charge to ground before it can build up to a discharge state.

Mechanical forces due to charges can be astronomical as now force is equal to the product of charges divided by the separation distance squared $F = \frac{KQ_1Q_2}{d^2}$ where F force is in Newtons, K is a proportionately constant related to the permittivity of free space by $1/4 \pi$ and is equal to $9 \times 10^9 \text{ Nm}^2/\text{Q}^2$, and d is in meters. As an example two similar 1 coulomb charges were placed a kilometer apart the repulsive forces would be 9×10^9 Newtons. This is equal to 15,000,000 people each weighing 134 pounds! The obvious problem is the very high potential required on a normal size object to achieve this charge value. Billions of volts would be necessary and would require a super duper dielectric to be developed...not in my lifetime! When it is developed, some real bizarre things will be possible. It would make a great source of propulsion – do the math!

A charged object also produces an electric field at a distance proportional to the charges in question. This force is 10^{42} times more powerful than gravitation! This is clearly shown in the above example.

The ion ray gun can produce all these effects and even though dealing with small electrical charges can provide very striking and unusual phenomena. The below shown experiments are an excellent demonstration explaining some of the above mentioned phenomena.