

Torsional Balance - Henry Cavendish Textbook 14.1

lead weights  
Henry Cavendish  
( $6.67 \times 10^{-11} \frac{Nm^2}{kg^2}$ )

Charles Coulomb  
1785  
Torsion  
 $K = 9.0 \times 10^{-9} \frac{Nm^2}{C^2}$

(styrofoam) graph  
charged object  
Torsional wire  
mirror  
+d  
-20 nC  
 $F = K \frac{Q_1 Q_2}{d^2}$   
 $9.0 \times 10^{-9}$

Fundamental Law of Electrostatics:  
like charges  $\rightarrow$  Repel  $\oplus$  force  
unlike charges  $\rightarrow$  Attract  $\ominus$  force

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