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The condition when the friction force is at its maximum value is called the condition of **impending motion**. That is, if P increases beyond the point $P = F_{\max}$, then friction can no longer supply the amount of force necessary for equilibrium. Therefore, the block will no longer be in equilibrium, but will start moving in the direction of the force P . When the block starts moving, the friction force F normally decreases in magnitude by about 20 to 25 percent. From this point on, the block will slide with increasing speed while the friction force (the kinetic friction force) remains approximately constant (Fig. 9-2).

Repeating the experiment with a different block and a different surface

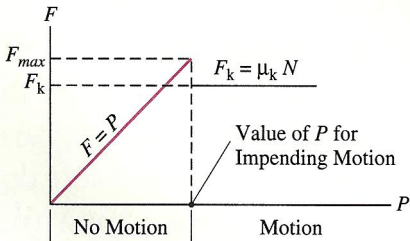


Figure 9-2 Variation of the friction force between two bodies.