stationary targets will return with exactly the same frequency. But if the distance between the radar and the reflecting object is changing, the frequency of the reflected signal received by the radar (whether due to movement of the radar or of its target) will be slightly changed, and the amount of the change can be used to measure the rate of change of the range to the target.

Modern methods of storage and processing make it possible to use this (Doppler) effect to distinguish moving objects from stationary ones,[28] and of course the background which usually makes it difficult to detect wanted targets is normally stationary. Even if some of the unwanted background echoes are coming from moving reflectors (such as ocean waves when it is desired to detect ships, or the movement of automobiles when it is desired to detect aircraft in flight over the land), and if the radar itself is moving, it is possible to reject echoes from reflectors moving at less than some selected speed, chosen to be lower than the speeds expected for the desired targets. A brief summary of the principles employed by pulse doppler radar is given in Annex C.

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[28] *Introduction to Airborne Radar*, op. cit., provides an excellent explanation of the basic doppler principle as well as a complete description of the application to airborne radars.