Nonbaryonic Dark Matter is one of the most search phenomenon in the Universe. We believe that Dark Matter forms giant halos around the visible structures like galaxies. We assume that Dark Matter is made of neutralinos - the lightest supersymmetric particles. The halos can be detected if the neutralinos annihilate strong enough and if the halo is dense enough. The sensitivity of the AMS detector to observe Dark Matter in gamma rays is based on two detectors: tracker and electromagnetic calorimeter. The large acceptance, large dynamic range and a long exposure of the AMS detector will allow to explore a significant fraction of supersymmetric parameter space.