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The Lyman α emission of starburst galaxies

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ABSTRACT. Nearby starburst galaxies have consistently shown anomalous Ly α /H β ratios. It has been suggested that dust, associated with resonant scattering, quenches the Ly α line by a large factor. However, the observed amount of dust can barely account for the large depletion factors. It is proposed here that a much more important effect is the age of the burst. Normal (ie, case B recombination) ratios are observed if the galaxy is currently undergoing the burst, while anomalous ratios appear when the galaxy is observed in the post-burst phase. Underlying stellar populations in the UV spectra should therefore be older in the latter case. This scenario explains the presence of Ly α in absorption. Implications for deep surveys are also discussed.