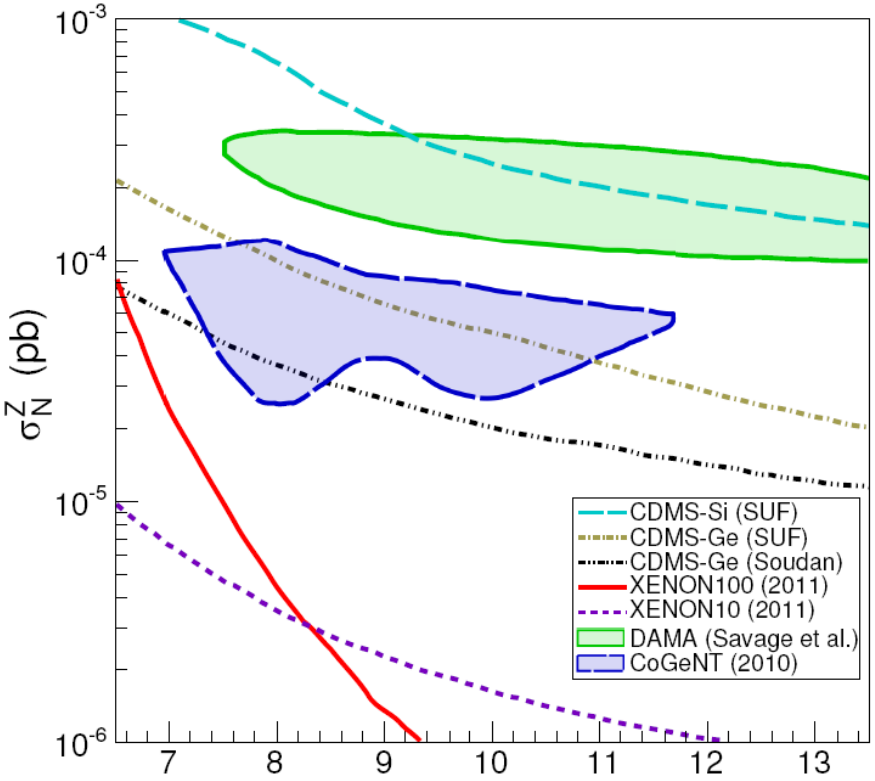
# XENOPHOBIC DARK MATTER 2011



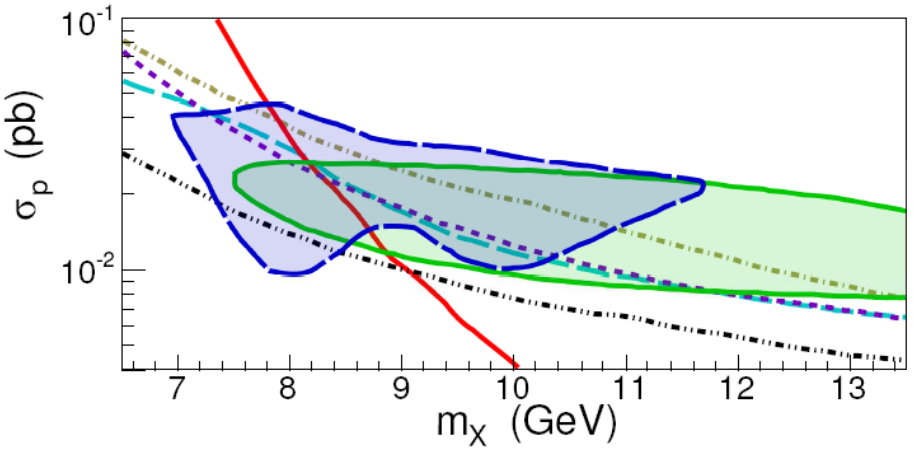




FIG. 1. Favored regions and exclusion contours in the $(m_X, \sigma_N^Z)$ plane (top), and in the $(m_X, \sigma_p)$ plane for IVDM with $f_n/f_p = -0.7$ (bottom).

Feng, Kumar, Marfatia, Sanford (2011)

# XENOPHOBIC DARK MATTER 2013

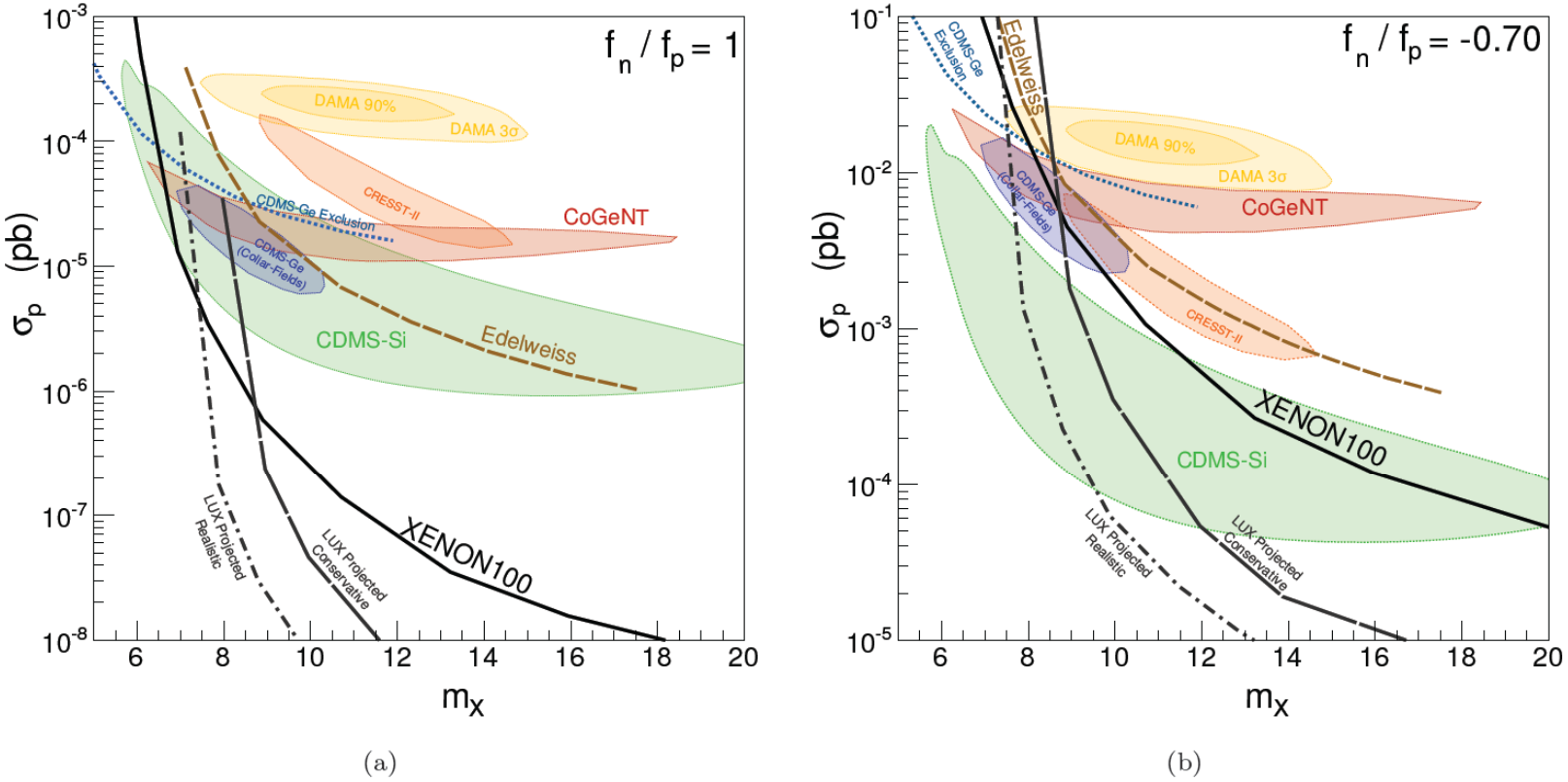
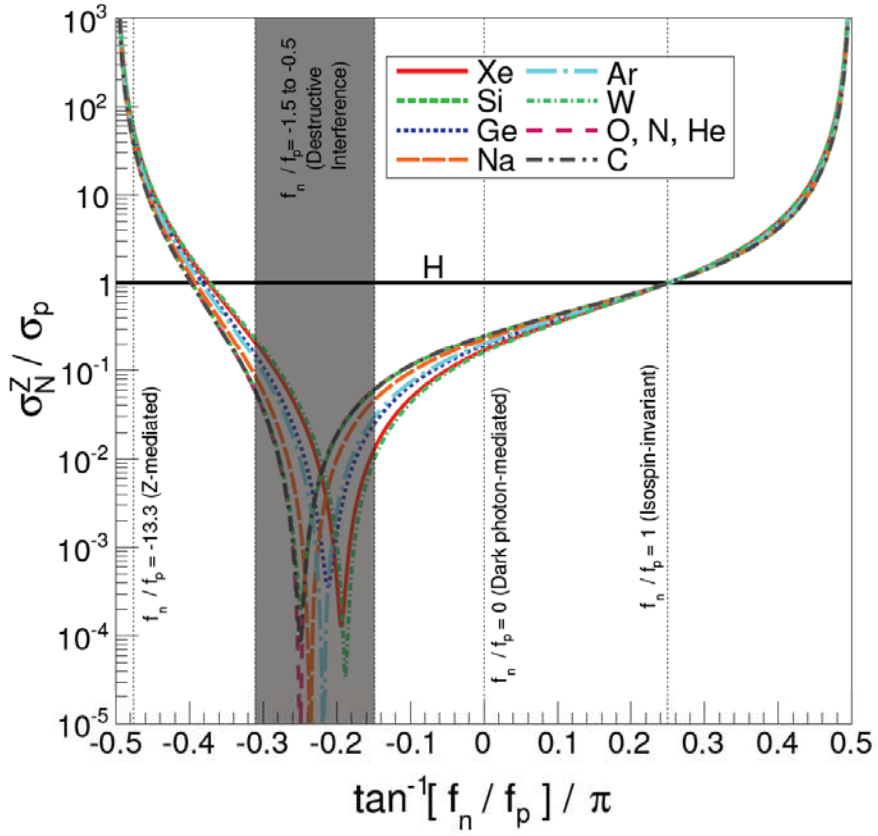


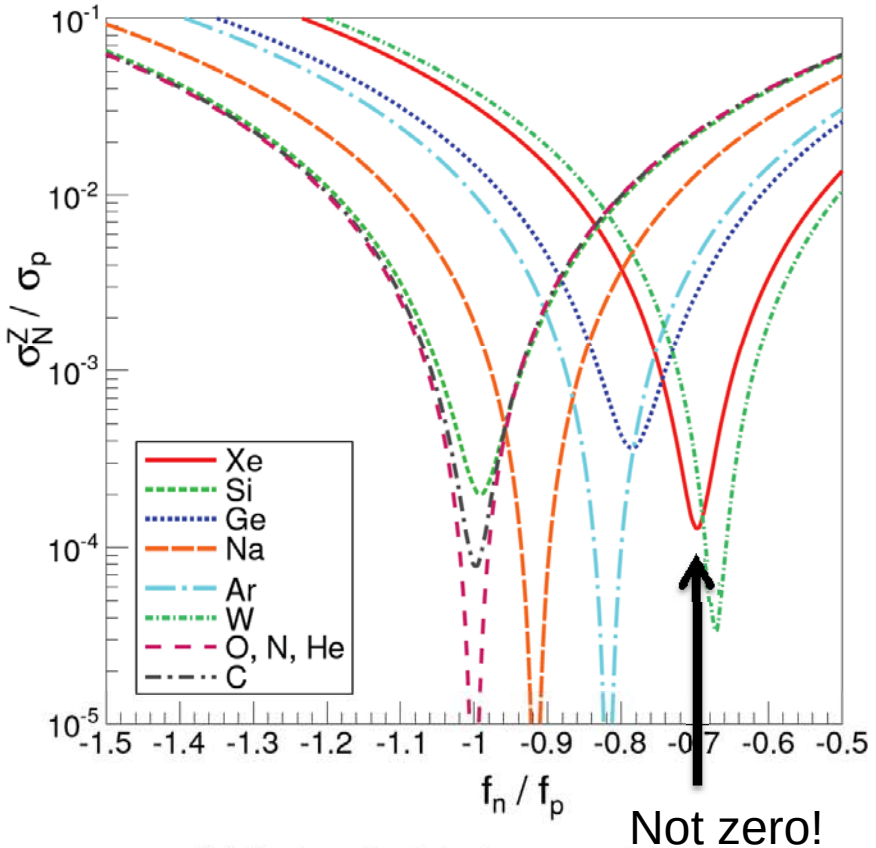

FIG. 2: Light dark matter experimental results in the $(m_X, \sigma_p)$ plane for (a) the isospin-invariant case $f_n/f_p = 1$ and (b) the xenophobic case $f_n/f_p = -0.70$ [6]. Plotted are 90% CL ROIs for CoGeNT [8], CRESST [10], CDMS-Si [11], an ROI for an independent analysis of CDMS-Ge data [18], the 90% and $3\sigma$ ROIs for DAMA [7] as determined in Refs. [19, 20]. Exclusion contours from CDMS [13], Edelweiss [14], and XENON100 [16, 17] are also shown, as are projected bounds from LUX [21].

Feng, Kumar, Sanford (2013); Feng, Kumar, Marfatia, Sanford (2013)

# ISOSPIN-VIOLATING DARK MATTER




(a) Entire $f_n/f_p$ range

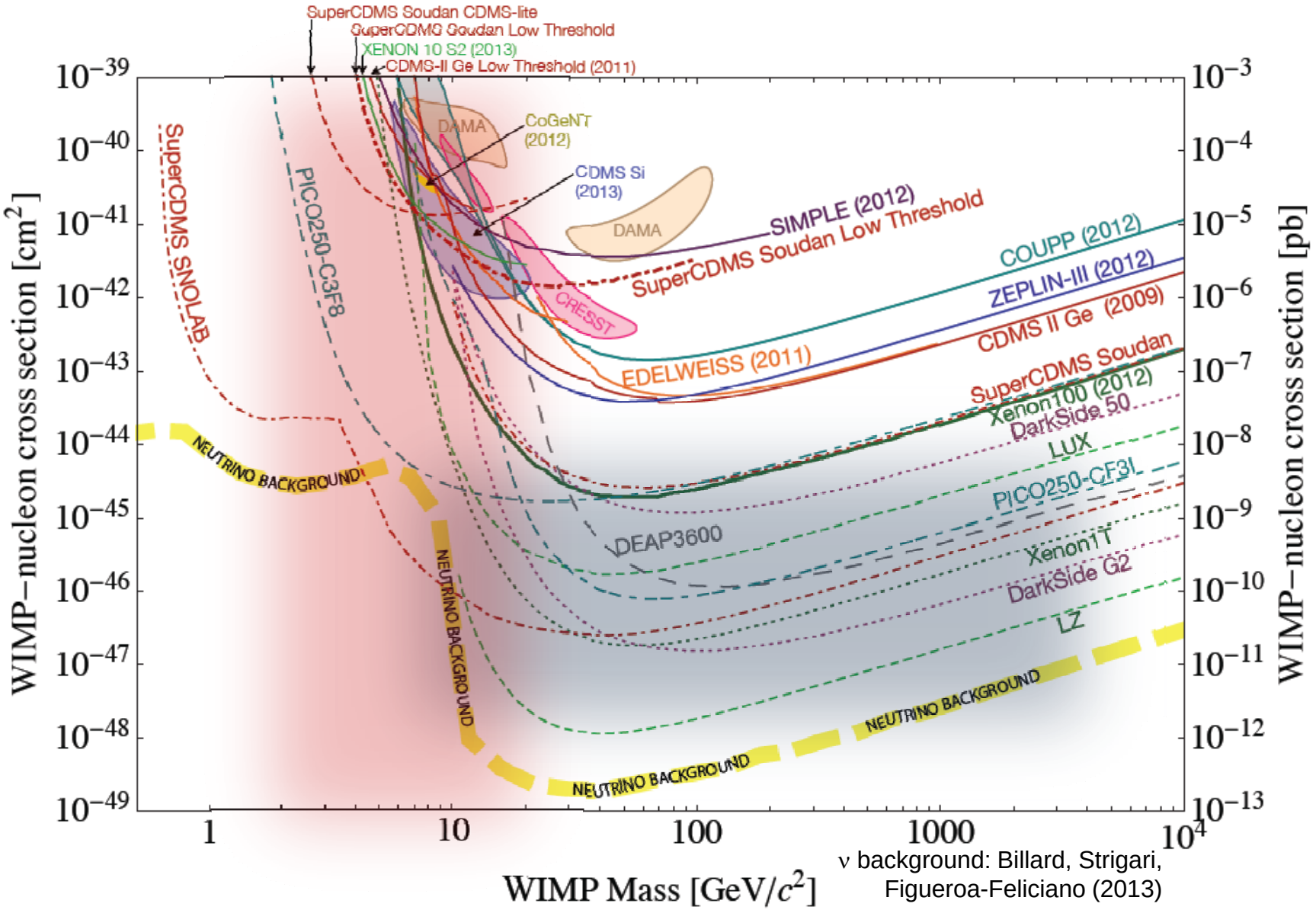



(b) Destructive interference region

FIG. 1: Ratio of $\sigma_Z^N$ to $\sigma_p$ for materials relevant to direct detection experiments [6]. Ratios are shown as a function of $f_n/f$ for (a) the entire range of couplings and (b) the destructive interference region. We have made the mild assumption that th reduced masses $\mu_{A_i}$ are all equal for a given element and dark matter mass.

Feng, Kumar, Sanford (2013); Feng, Kumar, Marfatia, Sanford (2013)

# CURRENT STATUS AND FUTURE PROSPECTS




ν background: Billard, Strigari, Figueroa-Feliciano (2013)