References for AxionLimits webpage

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1 Axion-photon

Haloscopes

- ABRACADABRA [1, 2]
- ADMX [3, 4, 5, 6]
- ADMX-Sidecar [7, 8]
- ADMX-SLIC [9]
- CAPP [10, 11, 12]
- BASE [13]
- GrAHal [14]
- HAYSTAC [15, 16]
- ORGAN [17]
- QUAX [18, 19]
- RADES [20]
- RBF [21]
- SHAFT [22]
- SuperMAG [23]
- UF [24]
- UPLOAD-DOWNLOAD [25]
- ABRACADABRA (projection) [26]
- ADBC (projection) [27]
- ADMX (projection) [28]
- aLIGO (projection) [29]
- ALPHA (projection) [30]
- BRASS (projection) [31]
- BREAD (projection) [32]
- DM-Radio (projection) [33]
- DANCE (projection) [34]
- LAMPOST (projection) [35]
- MADMAX (projection) [36]
- KLASH (projection) [37]
- ORGAN (projection) [17]
- TOORAD (projection) [38]
- WISPLC (projection) [39]

LSW/Helioscopes

- ALPS [40]
- CAST [41, 42]
- CROWS [43]
- OSQAR [44]
- PVLAS [45]
- SAPPHIRES [46]
- ALPS-II (projection) [47]
- IAXO (projection) [48]
- IAXO (Galactic SN) [49]

Astro

- Betelgeuse [50]
- Breakthrough Listen (Doppler shifted radio line in MW) [51]
- Bullet Cluster (archival radio data) [52]
- Chandra (Hydra) [53]
- Chandra (M87) [54]
- Chandra (NG7 1275) [55]
- Chandra (H1821+643) [56]
- Chandra (Magnetic white dwarfs) [56]
- COBE/FIRAS+Planck spectral dist. [57]
- Diffuse SN ALPs [58] (see also [59])
- Distance ladder [60]
- Fermi-LAT (NGC 1275) [61]
- Fermi-LAT (Extragalactic SNe) [62]
- HESS (PKS 2155-304) [63]
- Horizontal branch [64]
- Leo T gas temperature [65]
- Mrk 421 (ARGO-YBJ+Fermi): [66]
- Neutron Stars (Foster et al.) [67]
- Neutron Stars (Darling) [68]
- Neutron Stars (Battye et al.) [69]
- Solar neutrinos [70]
- SN1987A-γ [71]
- SN1987A-γ (low mass ALPs) [72]
- SN1987A-γ,ν (high mass ALPs) [73]
- Star clusters [74]
- Telescopes (Haystack) [75]
- Telescopes (MUSE) [76]
- Telescopes (VIMOS) [77]
- Fermi galactic SN (projection) [78]
- THESEUS (projection) [79]
- eROSITA (projection) [80]
- White dwarf initial-final mass relation [81]
- XMM-Newton (decaying DM ALPs) [82]

Cosmology

- Ionisation fraction, EBL, X-rays [83]
- BBN+$N_{\rm eff}$ [84]

2 Axion-electron

- EDELWEISS [85]
- Magnon non-demolition [86]
- GERDA [87]
- LUX [88]
- Panda-X [89]
- SuperCDMS [90]
- XENON1T [91, 92]
- XENON1T (Solar basin) [93]
- Red giants (ωCen) [94]
- Solar neutrinos [95]
- Magnons (projection) [96]
- Polaritons (projection) [97]
- DARWIN (projection) [98]
- LZ (projection) [99]
- QUAX [100, 101]
- Semiconductors (projection) [102]
- White dwarf hint [103]

3 Axion-nucleon

Note: CASPEr and nEDM limits account for stochastic correction reported in [104]

- CASPEr-ZULF-Comagnetometer [105]
- CASPEr-ZULF-Sidechain [106]
- nEDM (ultracold neutrons and mercury) [107]
- NASDUCK [108]
- K-3He comagnetometer [109]
- Old comagnetometers [110]
- Torsion balance [111]
- Hot Neutron Star (HESS J1731-347) [112]
- SN1987A Cooling [113]
- SNO (deuterium dissasociation) [114]
- Proton storage ring (projection) [115]
- DM comagnetometer (projection) [110]
- CASPEr-wind (projection) [106]

4 Axion-EDM

- CASPEr-electric [116]
- nEDM [107]
- SN1987A [117]
- CASPEr-electric (projection) [118]
- Storage Ring EDM (projection) [118]

5 Axion mass versus f_a

- BBN [119]
- Binary pulsars and Solar core constraint on $\bar{\theta}$ [120]. I include minor numerical corrections made by [121, 122].
- GW170817 [123]
- nEDM [107]
- SN1987A [124]
- Neutron stars (projection) [120].
- NS-NS and NS-BH Inspirals (projection) [120].

6 Axion theory predictions

6.1 Post-inflation QCD axion

- Ballesteros et al. [125]
- Buschmann et al. 2020 [126]
- Buschmann et al. 2021 [127]
- Bonati et al. [128]
- Borsanyi et al. [129]
- Berkowitz et al. [130]
- Dine et al. [131]
- Petreczky et al. [132]
- Fleury & Moore [133]
- Klaer & Moore [134]

6.2 Other dark matter predictions

- ALP Cogenesis [135]
- Early matter domination [136]
- Post-inflation ALP misalignment [137]
- Trapped misalignment ($\mathcal{Z}_N$ axion) [121]

7 CP-violating couplings

Combined constraints [138]

Scalar-nucleon

- Red giants [139]
- MICROSCOPE [140].
- Eot-Wash [141, 142, 143]
- Irvine [144]. Corrected to 2σ limit by [145]
- HUST [146, 147, 148, 149].
- Stanford [150]
- IUPUI [151].
- Wuhan [145]

Pseudoscalar-electron

- Red giants [139]
- Eot-wash [152]
- NIST [153]
- SMILE [154].
- QUAX [155, 156]
- Washington [157, 158].
- XENON1T [159]
- Magnon (projection) [97]
- QUAX (projection) [155].

Pseudoscalar-nucleon

- Neutron star cooling [112]
- Washington [160]. Limit taken from [161].
- SMILE [154].
- Mainz [162]
- ARIADNE (projection) [163]
- CASPEr-wind (projection) [118]
- DM comagnetometer (projection) [110]

8 Black hole superradiance

- Baryakhtar et al. [164] (just Stellar mass BHs)
- Mehta et al. [164] (Stellar mass and SMBHs)
- Stott [165]
- Cardoso et al. [166] (dark photon)

9 Dark photons

Combined constraints [167]

SM photon-DP transitions

- Coulomb [168, 169, 170, 171, 172],
- Plimpton & Lawton's experiment [173, 172]
- Atomic spectroscopy [174]
- Atomic force microscopy (AFM) [172]
- Static magnetic field of the Earth [175, 176]
- Static magnetic field of Jupiter [177, 176].
- ALPs [40]
- SPring-8 [178]
- UWA-LSW [179, 180]
- ADMX-LSW [181]
- CROWS [43].
- TEXONO [182]
- Crab nebula [183]
- COBE and FIRAS [184]

Production in stars

- CAST [185]
- SHIP [186]
- HB and RG stars [187]
- Neutron stars [188]
- Solar neutrinos [189]

Dark matter cosmology/astro

- Arias et al. [137]
- Witte et al. [190, 191]
- Caputo et al. [192, 184],
- IGM [193],
- Leo T dwarf [194]
- Gas clouds [195]

Dark matter experiments

- Reinterpreted axion limits [167]
- BREAD (projection) [32]
- DAMIC [196]
- Dark E-field Radio [197]
- DM Pathfinder [198]
- FUNK [199]
- LAMPOST [200]
- MuDHI [201]
- SENSEI [202]
- SHUKET [203]
- SuperCDMS [204]
- SuperMAG [205, 206]
- SQuAD [207],
- Tokyo dish antennae experiments [208, 209, 210]
- WISPDMX [211]
- XENON1T/XENON100 [102, 159, 212, 213].

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