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]
- FLASH (projection) [37, 38]
- QUAX (projection) [39]
- ORGAN (projection) [17]
- TOORAD (projection) [40]
- WISPLC (projection) [41]
- SRF heterodyne cavity (projection) [42]

LSW/Helioscopes

- ALPS [43]
- CAST [44, 45]
- CROWS [46]
- OSQAR [47]
- PVLAS [48]
- SAPPHIRES [49]
- ALPS-II (projection) [50]
- IAXO (projection) [51]
- IAXO (Galactic SN) [52]

Astro

- Betelgeuse [53]
- Breakthrough Listen (Doppler shifted radio line in MW) [54]
- Breakthrough Listen (Neutron stars) [55]
- Bullet Cluster (archival radio data) [56]
- Chandra (Hydra) [57]
- Chandra (M87) [58]
- Chandra (NG7 1275) [59]
- Chandra (H1821+643) [60]
- Chandra (Magnetic white dwarfs) [60]
- COBE/FIRAS+Planck spectral dist. [61]
- Diffuse SN ALPs [62] (see also [63])
- Distance ladder [64]
- Fermi-LAT (NGC 1275) [65]
- Fermi-LAT (Extragalactic SNe) [66]
- HAWC (TeV Blazars) [67]
- HESS (PKS 2155-304) [68]
- Horizontal branch [69]
- Leo T gas temperature [70]
- Magnetic white dwarf polarization [71]
- Mrk 421 (ARGO-YBJ+Fermi): [72]
- Neutron Stars (Foster et al.) [73]
- Neutron Stars (Darling) [74]
- Neutron Stars (Battye et al.) [75]
- Solar neutrinos [76]
- SN1987A-γ [77]
- SN1987A-γ (low mass ALPs) [78]
- SN1987A-γ,ν (high mass ALPs) [79]
- Star clusters [80]
- Telescopes (Haystack) [81]
- Telescopes (MUSE) [82]
- Telescopes (VIMOS) [83]
- Fermi galactic SN (projection) [84]
- THESEUS (projection) [85]
- eROSITA (projection) [86]
- White dwarf initial-final mass relation [87]
- XMM-Newton (decaying DM ALPs) [88]

Cosmology

- Ionisation fraction, EBL, X-rays [89]
- BBN+$N_{\rm eff}$ [90]

2 Axion-electron

- EDELWEISS [91]
- Magnon non-demolition [92]
- GERDA [93]
- LUX [94]
- Panda-X [95]
- SuperCDMS [96]
- XENON1T [97, 98]
- XENON1T (Solar basin) [99]
- Red giants (ωCen) [100]
- Solar neutrinos [101]
- Magnons (projection) [102]
- Polaritons (projection) [103]
- DARWIN (projection) [104]
- LZ (projection) [105]
- QUAX [106, 107]
- Semiconductors (projection) [108]
- White dwarf hint [109]
- X-rays (1-loop decay) [110]

3 Axion-nucleon

Note: CASPEr and nEDM limits account for stochastic correction reported in [111]

- CASPEr-ZULF-Comagnetometer [112]
- CASPEr-ZULF-Sidechain [113]
- nEDM (ultracold neutrons and mercury) [114]
- NASDUCK [115]
- K-3He comagnetometer [116]
- Old comagnetometers [117]
- Torsion balance [118]
- Neutron star cooling [119] (corrected from [120])
- SN1987A Cooling [121]
- SNO (deuterium dissasociation) [122]
- Proton storage ring (projection) [123]
- DM comagnetometer (projection) [117]
- CASPEr-wind (projection) [113]

4 Axion-EDM

- CASPEr-electric [124]
- nEDM [114]
- SN1987A [125]
- CASPEr-electric (projection) [126]
- Storage Ring EDM (projection) [126]

5 Axion mass versus f_a

- BBN [127]
- Binary pulsars and Solar core constraint on $\bar{\theta}$ [128]. I include minor numerical corrections made by [129, 130].
- GW170817 [131]
- nEDM [114]
- Piezoaxionic effect (projection) [132]
- SN1987A [133]
- Neutron stars (projection) [128].
- NS-NS and NS-BH Inspirals (projection) [128].

6 Axion theory predictions

6.1 Post-inflation QCD axion

- Ballesteros et al. [134]
- Buschmann et al. 2020 [135]
- Buschmann et al. 2021 [136]
- Bonati et al. [137]
- Borsanyi et al. [138]
- Berkowitz et al. [139]
- Dine et al. [140]
- Petreczky et al. [141]
- Fleury & Moore [142]
- Klaer & Moore [143]

6.2 Other dark matter predictions

- ALP Cogenesis [144]
- Early matter domination [145]
- Post-inflation ALP misalignment [146]
- Trapped misalignment ($\mathcal{Z}_N$ axion) [129]

7 CP-violating couplings

Combined constraints [147]

Scalar-nucleon

- Red giants [148]
- MICROSCOPE [149].
- Eot-Wash [150, 151, 152]
- Irvine [153]. Corrected to 2σ limit by [154]
- HUST [155, 156, 157, 158].
- Stanford [159]
- IUPUI [160].
- Wuhan [154]

Pseudoscalar-electron

- Red giants [148]
- Eot-wash [161]
- NIST [162]
- SMILE [163].
- QUAX [164, 165]
- Washington [166, 167].
- XENON1T [168]
- Magnon (projection) [103]
- QUAX (projection) [164].

Pseudoscalar-nucleon

- Neutron star cooling [120]
- Washington [169]. Limit taken from [170].
- SMILE [163].
- Mainz [171]
- ARIADNE (projection) [172]
- CASPEr-wind (projection) [126]
- DM comagnetometer (projection) [117]

8 Black hole superradiance

- Baryakhtar et al. [173] (just Stellar mass BHs)
- Mehta et al. [173] (Stellar mass and SMBHs)
- Stott [174]
- Cardoso et al. [175] (dark photon)

9 Dark photons

Combined constraints [176]

SM photon-DP transitions

- Coulomb [177, 178, 179, 180, 181],
- Plimpton & Lawton's experiment [182, 181]
- Atomic spectroscopy [183]
- Atomic force microscopy (AFM) [181]
- Static magnetic field of the Earth [184, 185]
- Static magnetic field of Jupiter [186, 185].
- ALPs [43]
- SPring-8 [187]
- UWA-LSW [188, 189]
- ADMX-LSW [190]
- CROWS [46].
- TEXONO [191]
- Crab nebula [192]
- COBE and FIRAS [193]

Production in stars

- CAST [194]
- SHIP [195]
- HB and RG stars [196]
- Neutron stars [197]
- Solar neutrinos [198]

Dark matter cosmology/astro

- Arias et al. [146]
- Witte et al. [199, 200]
- Caputo et al. [201, 193],
- IGM [202],
- Leo T dwarf [203]
- Gas clouds [204]

Dark matter experiments

- Reinterpreted axion limits [176]
- BREAD (projection) [32]
- DAMIC [205]
- Dark E-field Radio [206]
- DM Pathfinder [207]
- FUNK [208]
- LAMPOST [209]
- MuDHI [210]
- SENSEI [211]
- SHUKET [212]
- SuperCDMS [213]
- SuperMAG [214, 215]
- SQuAD [216],
- Tokyo dish antennae experiments [217, 218, 219]
- WISPDMX [220]
- XENON1T/XENON100 [108, 168, 221, 222, 223].

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