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]
- SRF heterodyne cavity (projection) [40]

LSW/Helioscopes

- ALPS [41]
- CAST [42, 43]
- CROWS [44]
- OSQAR [45]
- PVLAS [46]
- SAPPHIRES [47]
- ALPS-II (projection) [48]
- IAXO (projection) [49]
- IAXO (Galactic SN) [50]

Astro

- Betelgeuse [51]
- Breakthrough Listen (Doppler shifted radio line in MW) [52]
- Breakthrough Listen (Neutron stars) [53]
- Bullet Cluster (archival radio data) [54]
- Chandra (Hydra) [55]
- Chandra (M87) [56]
- Chandra (NG7 1275) [57]
- Chandra (H1821+643) [58]
- Chandra (Magnetic white dwarfs) [58]
- COBE/FIRAS+Planck spectral dist. [59]
- Diffuse SN ALPs [60] (see also [61])
- Distance ladder [62]
- Fermi-LAT (NGC 1275) [63]
- Fermi-LAT (Extragalactic SNe) [64]
- HAWC (TeV Blazars) [65]
- HESS (PKS 2155-304) [66]
- Horizontal branch [67]
- Leo T gas temperature [68]
- Magnetic white dwarf polarization [69]
- Mrk 421 (ARGO-YBJ+Fermi): [70]
- Neutron Stars (Foster et al.) [71]
- Neutron Stars (Darling) [72]
- Neutron Stars (Battye et al.) [73]
- Solar neutrinos [74]
- SN1987A-γ [75]
- SN1987A-γ (low mass ALPs) [76]
- SN1987A-γ,ν (high mass ALPs) [77]
- Star clusters [78]
- Telescopes (Haystack) [79]
- Telescopes (MUSE) [80]
- Telescopes (VIMOS) [81]
- Fermi galactic SN (projection) [82]
- THESEUS (projection) [83]
- eROSITA (projection) [84]
- White dwarf initial-final mass relation [85]
- XMM-Newton (decaying DM ALPs) [86]

Cosmology

- Ionisation fraction, EBL, X-rays [87]
- BBN+$N_{\rm eff}$ [88]

2 Axion-electron

- EDELWEISS [89]
- Magnon non-demolition [90]
- GERDA [91]
- LUX [92]
- Panda-X [93]
- SuperCDMS [94]
- XENON1T [95, 96]
- XENON1T (Solar basin) [97]
- Red giants (ωCen) [98]
- Solar neutrinos [99]
- Magnons (projection) [100]
- Polaritons (projection) [101]
- DARWIN (projection) [102]
- LZ (projection) [103]
- QUAX [104, 105]
- Semiconductors (projection) [106]
- White dwarf hint [107]
- X-rays (1-loop decay) [108]

3 Axion-nucleon

Note: CASPEr and nEDM limits account for stochastic correction reported in [109]

- CASPEr-ZULF-Comagnetometer [110]
- CASPEr-ZULF-Sidechain [111]
- nEDM (ultracold neutrons and mercury) [112]
- NASDUCK [113]
- K-3He comagnetometer [114]
- Old comagnetometers [115]
- Torsion balance [116]
- Neutron star cooling [117] (corrected from [118])
- SN1987A Cooling [119]
- SNO (deuterium dissasociation) [120]
- Proton storage ring (projection) [121]
- DM comagnetometer (projection) [115]
- CASPEr-wind (projection) [111]

4 Axion-EDM

- CASPEr-electric [122]
- nEDM [112]
- SN1987A [123]
- CASPEr-electric (projection) [124]
- Storage Ring EDM (projection) [124]

5 Axion mass versus f_a

- BBN [125]
- Binary pulsars and Solar core constraint on $\bar{\theta}$ [126]. I include minor numerical corrections made by [127, 128].
- GW170817 [129]
- nEDM [112]
- Piezoaxionic effect (projection) [130]
- SN1987A [131]
- Neutron stars (projection) [126].
- NS-NS and NS-BH Inspirals (projection) [126].

6 Axion theory predictions

6.1 Post-inflation QCD axion

- Ballesteros et al. [132]
- Buschmann et al. 2020 [133]
- Buschmann et al. 2021 [134]
- Bonati et al. [135]
- Borsanyi et al. [136]
- Berkowitz et al. [137]
- Dine et al. [138]
- Petreczky et al. [139]
- Fleury & Moore [140]
- Klaer & Moore [141]

6.2 Other dark matter predictions

- ALP Cogenesis [142]
- Early matter domination [143]
- Post-inflation ALP misalignment [144]
- Trapped misalignment ($\mathcal{Z}_N$ axion) [127]

7 CP-violating couplings

Combined constraints [145]

Scalar-nucleon

- Red giants [146]
- MICROSCOPE [147].
- Eot-Wash [148, 149, 150]
- Irvine [151]. Corrected to 2σ limit by [152]
- HUST [153, 154, 155, 156].
- Stanford [157]
- IUPUI [158].
- Wuhan [152]

Pseudoscalar-electron

- Red giants [146]
- Eot-wash [159]
- NIST [160]
- SMILE [161].
- QUAX [162, 163]
- Washington [164, 165].
- XENON1T [166]
- Magnon (projection) [101]
- QUAX (projection) [162].

Pseudoscalar-nucleon

- Neutron star cooling [118]
- Washington [167]. Limit taken from [168].
- SMILE [161].
- Mainz [169]
- ARIADNE (projection) [170]
- CASPEr-wind (projection) [124]
- DM comagnetometer (projection) [115]

8 Black hole superradiance

- Baryakhtar et al. [171] (just Stellar mass BHs)
- Mehta et al. [171] (Stellar mass and SMBHs)
- Stott [172]
- Cardoso et al. [173] (dark photon)

9 Dark photons

Combined constraints [174]

SM photon-DP transitions

- Coulomb [175, 176, 177, 178, 179],
- Plimpton & Lawton's experiment [180, 179]
- Atomic spectroscopy [181]
- Atomic force microscopy (AFM) [179]
- Static magnetic field of the Earth [182, 183]
- Static magnetic field of Jupiter [184, 183].
- ALPs [41]
- SPring-8 [185]
- UWA-LSW [186, 187]
- ADMX-LSW [188]
- CROWS [44].
- TEXONO [189]
- Crab nebula [190]
- COBE and FIRAS [191]

Production in stars

- CAST [192]
- SHIP [193]
- HB and RG stars [194]
- Neutron stars [195]
- Solar neutrinos [196]

Dark matter cosmology/astro

- Arias et al. [144]
- Witte et al. [197, 198]
- Caputo et al. [199, 191],
- IGM [200],
- Leo T dwarf [201]
- Gas clouds [202]

Dark matter experiments

- Reinterpreted axion limits [174]
- BREAD (projection) [32]
- DAMIC [203]
- Dark E-field Radio [204]
- DM Pathfinder [205]
- FUNK [206]
- LAMPOST [207]
- MuDHI [208]
- SENSEI [209]
- SHUKET [210]
- SuperCDMS [211]
- SuperMAG [212, 213]
- SQuAD [214],
- Tokyo dish antennae experiments [215, 216, 217]
- WISPDMX [218]
- XENON1T/XENON100 [106, 166, 219, 220, 221].

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