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, 13, 14]
- CAST-CAPP [15]
- BASE [16]
- GrAHal [17]
- HAYSTAC [18, 19]
- ORGAN [20, 21]
- QUAX [22, 23]
- RADES [24]
- RBF [25]
- SHAFT [26]
- TASEH [27]
- SuperMAG [28]
- UF [29]
- UPLOAD-DOWNLOAD [30]
- ABRACADABRA (projection) [31]
- ADBC (projection) [32]
- ADMX (projection) [33]
- aLIGO (projection) [34]
- ALPHA (projection) [35]
- BRASS (projection) [36]
- BREAD (projection) [37]
- CADEx (projection) [38]
- DM-Radio (projection) [39, 40]
- DANCE (projection) [41]
- LAMPOST (projection) [42]
- MADMAX (projection) [43]
- FLASH (projection) [44, 45]
- QUAX (projection) [46]
- ORGAN (projection) [20]
- TOORAD (projection) [47]
- WISPLC (projection) [48]
- SRF heterodyne cavity (projection) [49]

LSW/Helioscopes

- ALPS [50]
- CAST [51, 52]
- CROWS [53]
- OSQAR [54]
- PVLAS [55]
- SAPPHIRES [56]
- ALPS-II (projection) [57]
- IAXO (projection) [58]
- IAXO (Galactic SN) [59]

Astro

- Betelgeuse [60]
- Breakthrough Listen (Doppler shifted radio line in MW) [61]
- Breakthrough Listen (Neutron stars) [62]
- Bullet Cluster (archival radio data) [63]
- Cosmic IR background (hint) [64]
- Chandra (Hydra) [65]
- Chandra (M87) [66]
- Chandra (NG7 1275) [67]
- Chandra (H1821+643) [68]
- Chandra (Magnetic white dwarfs) [68]
- COBE/FIRAS+Planck spectral dist. [69]
- Diffuse SN ALPs [70] (see also [71])
- Distance ladder [72]
- Fermi-LAT (NGC 1275) [73]
- Fermi-LAT (Extragalactic SNe) [74]
- Fermi-LAT (Quasars) [75]
- Globular clusters (R parameter) [76]
- Globular clusters (R_2 parameter) [77]
- HAWC (TeV Blazars) [78]
- HESS (PKS 2155-304) [79]
- Leo T gas temperature [80]
- Magnetic white dwarf polarization [81]
- Mrk 421 (ARGO-YBJ+Fermi): [82]
- Neutron Stars (Foster et al.) [83]
- Neutron Stars (Darling) [84]
- Neutron Stars (Battye et al.) [85]
- Pulsar polar cap [86]
- Solar neutrinos [87]
- SN1987A-γ [88]
- SN1987A-γ (low mass ALPs) [89]
- SN1987A-γ,ν (high mass ALPs) [90]
- Low-energy supernovae (ALP decay) [91]
- Solar basin (NuSTAR) [92]
- Star clusters [93]
- Telescopes (Haystack) [94]
- Telescopes (MUSE) [95]
- Telescopes (VIMOS) [96]
- Telescopes (HST) [97]
- Fermi galactic SN (projection) [98]
- THESEUS (projection) [99]
- eROSITA (projection) [100]
- White dwarf initial-final mass relation [101]
- XMM-Newton (decaying DM ALPs) [102]

Cosmology

- Ionisation fraction, EBL, X-rays [103]
- BBN+$N_{\rm eff}$ [104]

2 Axion-electron

- EDELWEISS [105]
- Magnon non-demolition [106]
- GERDA [107]
- LUX [108]
- Panda-X [109]
- SuperCDMS [110]
- XENON1T [111, 112]
- XENONnT [in prep.]
- XENON1T (Solar basin) [113]
- Red giants (ωCen) [114]
- Solar neutrinos [115]
- Magnons (projection) [116]
- Polaritons (projection) [117]
- DARWIN (projection) [118]
- LZ (projection) [119]
- QUAX [120, 121]
- Semiconductors (projection) [122]
- White dwarf hint [123]
- X-rays (1-loop decay) [124]

3 Axion-nucleon

Note: CASPEr and nEDM limits account for stochastic correction reported in [125]

- CASPEr-ZULF-Comagnetometer [126]
- CASPEr-ZULF-Sidechain [127]
- nEDM (ultracold neutrons and mercury) [128]
- NASDUCK [129]
- K-3He comagnetometer [130]
- Old comagnetometers [131]
- Torsion balance [132]
- Neutron star cooling [133] (corrected from [134])
- SN1987A Cooling [135]
- SNO (deuterium dissasociation) [136]
- Proton storage ring (projection) [137]
- DM comagnetometer (projection) [131]
- CASPEr-wind (projection) [127]

4 Axion-EDM

- Beam EDM [138]
- CASPEr-electric [139]
- nEDM [128]
- HfF^+ [140]
- SN1987A [141]
- *Planck*+BAO thermal axion bound [142]
- CASPEr-electric (projection) [143]
- Storage Ring EDM (projection) [143]

5 Axion mass versus f_a

- BBN [144]
- Beam EDM [138]
- Binary pulsars and Solar core constraint on $\bar{\theta}$ [145]. I include minor numerical corrections made by [146, 147].
- GW170817 [148]
- HfF^+ [140]
- nEDM [128]
- Piezoaxionic effect (projection) [149]
- SN1987A [141]
- Neutron stars (projection) [145].
- NS-NS and NS-BH Inspirals (projection) [145].
- White dwarfs [150]

6 Axion theory predictions

6.1 Post-inflation QCD axion

- Ballesteros et al. [151]
- Buschmann et al. 2020 [152]
- Buschmann et al. 2021 [153]
- Bonati et al. [154]
- Borsanyi et al. [155]
- Berkowitz et al. [156]
- Dine et al. [157]
- Petreczky et al. [158]
- Fleury & Moore [159]
- Klaer & Moore [160]

6.2 Other dark matter predictions

- ALP Cogenesis [161]
- Early matter domination [162]
- Post-inflation ALP misalignment [163]
- Trapped misalignment ($\mathcal{Z}_\mathcal{N}$ axion) [146]

7 CP-violating couplings

Combined constraints [164]

Scalar-nucleon

- Red giants [165]
- MICROSCOPE [166].
- Eot-Wash [167, 168, 169]
- Irvine [170]. Corrected to 2σ limit by [171]
- HUST [172, 173, 174, 175].
- Stanford [176]
- IUPUI [177].
- Wuhan [171]

Pseudoscalar-electron

- Red giants [165]
- Eot-wash [178]
- NIST [179]
- SMILE [180].
- QUAX [181, 182]
- Washington [183, 184].
- XENON1T [185]
- Magnon (projection) [117]
- QUAX (projection) [181].

Pseudoscalar-nucleon

- Neutron star cooling [134]
- Washington [186]. Limit taken from [187].
- SMILE [180].
- Mainz [188]
- ARIADNE (projection) [189]
- CASPEr-wind (projection) [143]
- DM comagnetometer (projection) [131]

8 Black hole superradiance

- Baryakhtar et al. [190] (just Stellar mass BHs)
- Mehta et al. [190] (Stellar mass and SMBHs)
- Stott [191]
- Ünal et al. [192] (Quasars)
- Cardoso et al. [193] (dark photon)

9 Dark photons

Combined constraints [194]

SM photon-DP transitions

- Coulomb [195, 196, 197, 198, 199],
- Plimpton & Lawton's experiment [200, 199]
- Atomic spectroscopy [201]
- Atomic force microscopy (AFM) [199]
- Static magnetic field of the Earth [202, 203, 204]
- Static magnetic field of Jupiter [205, 204].
- ALPs [50]
- SPring-8 [206]
- UWA-LSW [207, 208]
- ADMX-LSW [209]
- CROWS [53].
- TEXONO [210]
- Crab nebula [211]
- COBE and FIRAS [212]

Production in stars

- CAST [213]
- SHIP [214]
- HB and RG stars [215]
- Neutron stars [216]
- Solar neutrinos [217]

Dark matter cosmology/astro

- Arias et al. [163]
- Witte et al. [218, 219]
- Caputo et al. [220, 212],
- IGM [221],
- Leo T dwarf [222]
- Gas clouds [223]

Dark matter experiments

- Reinterpreted axion limits [194]
- BREAD (projection) [37]
- DAMIC [224]
- Dark E-field Radio [225]
- DM Pathfinder [226]
- DOSUE-RR [227]
- FAST Radio antenna [228]
- FUNK [229]
- LAMPOST [230]
- MuDHI [231]
- ORPHEUS [232]
- SENSEI [233]
- SHUKET [234]
- SuperCDMS [235]
- SuperMAG [236, 237]
- SQuAD [238],
- SQMS [239],
- Tokyo dish antennae experiments [240, 241, 242]
- WISPDMX [243]
- XENON(100,1T,nT) [122, 185, 244, 245, 246, 247].

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