References for AxionLimits webpage

Ciaran A. J. O'Hare

ARC Centre of Excellence for Dark Matter Particle Physics
The University of Sydney, Camperdown, NSW 2006, Australia

1 Axion-photon

Haloscopes

- ABRACADABRA [1, 2]
- ADMX [3, 4, 5, 6]
- ADMX-Sidecar [7, 8]
- ADMX-SLIC [9]
- CAPP [10, 11, 12, 13]
- BASE [14]
- GrAHal [15]
- HAYSTAC [16, 17]
- ORGAN [18, 19]
- QUAX [20, 21]
- RADES [22]
- RBF [23]
- SHAFT [24]
- TASEH [25]
- SuperMAG [26]
- UF [27]
- UPLOAD-DOWNLOAD [28]
- ABRACADABRA (projection) [29]
- ADBC (projection) [30]
- ADMX (projection) [31]
- aLIGO (projection) [32]
- ALPHA (projection) [33]
- BRASS (projection) [34]
- BREAD (projection) [35]
- CADEx (projection) [36]
- DM-Radio (projection) [37, 38]
- DANCE (projection) [39]
- LAMPOST (projection) [40]
- MADMAX (projection) [41]
- FLASH (projection) [42, 43]
- QUAX (projection) [44]
- ORGAN (projection) [18]
- TOORAD (projection) [45]
- WISPLC (projection) [46]
- SRF heterodyne cavity (projection) [47]

LSW/Helioscopes

- ALPS [48]
- CAST [49, 50]
- CROWS [51]
- OSQAR [52]
- PVLAS [53]
- SAPPHIRES [54]
- ALPS-II (projection) [55]
- IAXO (projection) [56]
- IAXO (Galactic SN) [57]

Astro

- Betelgeuse [58]
- Breakthrough Listen (Doppler shifted radio line in MW) [59]
- Breakthrough Listen (Neutron stars) [60]
- Bullet Cluster (archival radio data) [61]
- Chandra (Hydra) [62]
- Chandra (M87) [63]
- Chandra (NG7 1275) [64]
- Chandra (H1821+643) [65]
- Chandra (Magnetic white dwarfs) [65]
- COBE/FIRAS+Planck spectral dist. [66]
- Diffuse SN ALPs [67] (see also [68])
- Distance ladder [69]
- Fermi-LAT (NGC 1275) [70]
- Fermi-LAT (Extragalactic SNe) [71]
- Globular clusters (R parameter) [72]
- Globular clusters (R_2 parameter) [73]
- HAWC (TeV Blazars) [74]
- HESS (PKS 2155-304) [75]
- Leo T gas temperature [76]
- Magnetic white dwarf polarization [77]
- Mrk 421 (ARGO-YBJ+Fermi): [78]
- Neutron Stars (Foster et al.) [79]
- Neutron Stars (Darling) [80]
- Neutron Stars (Battye et al.) [81]
- Solar neutrinos [82]
- SN1987A-γ [83]
- SN1987A-γ (low mass ALPs) [84]
- SN1987A-γ,ν (high mass ALPs) [85]
- Low-energy supernovae (ALP decay) [86]
- Solar basin (NuSTAR) [87]
- Star clusters [88]
- Telescopes (Haystack) [89]
- Telescopes (MUSE) [90]
- Telescopes (VIMOS) [91]
- Fermi galactic SN (projection) [92]
- THESEUS (projection) [93]
- eROSITA (projection) [94]
- White dwarf initial-final mass relation [95]
- XMM-Newton (decaying DM ALPs) [96]

Cosmology

- Ionisation fraction, EBL, X-rays [97]
- BBN+$N_{\rm eff}$ [98]

2 Axion-electron

- EDELWEISS [99]
- Magnon non-demolition [100]
- GERDA [101]
- LUX [102]
- Panda-X [103]
- SuperCDMS [104]
- XENON1T [105, 106]
- XENONnT [in prep.]
- XENON1T (Solar basin) [107]
- Red giants (ωCen) [108]
- Solar neutrinos [109]
- Magnons (projection) [110]
- Polaritons (projection) [111]
- DARWIN (projection) [112]
- LZ (projection) [113]
- QUAX [114, 115]
- Semiconductors (projection) [116]
- White dwarf hint [117]
- X-rays (1-loop decay) [118]

3 Axion-nucleon

Note: CASPEr and nEDM limits account for stochastic correction reported in [119]

- CASPEr-ZULF-Comagnetometer [120]
- CASPEr-ZULF-Sidechain [121]
- nEDM (ultracold neutrons and mercury) [122]
- NASDUCK [123]
- K-3He comagnetometer [124]
- Old comagnetometers [125]
- Torsion balance [126]
- Neutron star cooling [127] (corrected from [128])
- SN1987A Cooling [129]
- SNO (deuterium dissasociation) [130]
- Proton storage ring (projection) [131]
- DM comagnetometer (projection) [125]
- CASPEr-wind (projection) [121]

4 Axion-EDM

- Beam EDM [132]
- CASPEr-electric [133]
- nEDM [122]
- HfF^+ [134]
- SN1987A [135]
- *Planck*+BAO thermal axion bound [136]
- CASPEr-electric (projection) [137]
- Storage Ring EDM (projection) [137]

5 Axion mass versus f_a

- BBN [138]
- Beam EDM [132]
- Binary pulsars and Solar core constraint on $\bar{\theta}$ [139]. I include minor numerical corrections made by [140, 141].
- GW170817 [142]
- HfF^+ [134]
- nEDM [122]
- Piezoaxionic effect (projection) [143]
- SN1987A [135]
- Neutron stars (projection) [139].
- NS-NS and NS-BH Inspirals (projection) [139].

6 Axion theory predictions

6.1 Post-inflation QCD axion

- Ballesteros et al. [144]
- Buschmann et al. 2020 [145]
- Buschmann et al. 2021 [146]
- Bonati et al. [147]
- Borsanyi et al. [148]
- Berkowitz et al. [149]
- Dine et al. [150]
- Petreczky et al. [151]
- Fleury & Moore [152]
- Klaer & Moore [153]

6.2 Other dark matter predictions

- ALP Cogenesis [154]
- Early matter domination [155]
- Post-inflation ALP misalignment [156]
- Trapped misalignment ($\mathcal{Z}_N$ axion) [140]

7 CP-violating couplings

Combined constraints [157]

Scalar-nucleon

- Red giants [158]
- MICROSCOPE [159].
- Eot-Wash [160, 161, 162]
- Irvine [163]. Corrected to 2σ limit by [164]
- HUST [165, 166, 167, 168].
- Stanford [169]
- IUPUI [170].
- Wuhan [164]

Pseudoscalar-electron

- Red giants [158]
- Eot-wash [171]
- NIST [172]
- SMILE [173].
- QUAX [174, 175]
- Washington [176, 177].
- XENON1T [178]
- Magnon (projection) [111]
- QUAX (projection) [174].

Pseudoscalar-nucleon

- Neutron star cooling [128]
- Washington [179]. Limit taken from [180].
- SMILE [173].
- Mainz [181]
- ARIADNE (projection) [182]
- CASPEr-wind (projection) [137]
- DM comagnetometer (projection) [125]

8 Black hole superradiance

- Baryakhtar et al. [183] (just Stellar mass BHs)
- Mehta et al. [183] (Stellar mass and SMBHs)
- Stott [184]
- Ünal et al. [185] (Quasars)
- Cardoso et al. [186] (dark photon)

9 Dark photons

Combined constraints [187]

SM photon-DP transitions

- Coulomb [188, 189, 190, 191, 192],
- Plimpton & Lawton's experiment [193, 192]
- Atomic spectroscopy [194]
- Atomic force microscopy (AFM) [192]
- Static magnetic field of the Earth [195, 196, 197]
- Static magnetic field of Jupiter [198, 197].
- ALPs [48]
- SPring-8 [199]
- UWA-LSW [200, 201]
- ADMX-LSW [202]
- CROWS [51].
- TEXONO [203]
- Crab nebula [204]
- COBE and FIRAS [205]

Production in stars

- CAST [206]
- SHIP [207]
- HB and RG stars [208]
- Neutron stars [209]
- Solar neutrinos [210]

Dark matter cosmology/astro

- Arias et al. [156]
- Witte et al. [211, 212]
- Caputo et al. [213, 205],
- IGM [214],
- Leo T dwarf [215]
- Gas clouds [216]

Dark matter experiments

- Reinterpreted axion limits [187]
- BREAD (projection) [35]
- DAMIC [217]
- Dark E-field Radio [218]
- DM Pathfinder [219]
- DOSUE-RR [220]
- FAST Radio antenna [221]
- FUNK [222]
- LAMPOST [223]
- MuDHI [224]
- ORPHEUS [225]
- SENSEI [226]
- SHUKET [227]
- SuperCDMS [228]
- SuperMAG [229, 230]
- SQuAD [231],
- SQMS [232],
- Tokyo dish antennae experiments [233, 234, 235]
- WISPDMX [236]
- XENON(100,1T,nT) [116, 178, 237, 238, 239, 240].

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