
THE AFS EXPERIMENT AT THE ISR

I. Hadron production in pp collisions.

1) A comparison of hadron production in pp and $p\bar{p}$ collisions in the central region at $\sqrt{s} = 53$ GeV.

The AFS collaboration. Nuclear Physics B228 (1983) 409.

2) Antibaryon production in the central region at the ISR.

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3) Rapidity and charge correlations of central produced charged tracks in events with a high-momentum π^0 near 11° .

The AFS collaboration. Physical Review D31 (1985) 976.

II. Lepton Production in pp collisions.

4) Production of prompt positrons at low transverse momentum in 63 GeV pp collisions at the CERN ISR.

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5) The production of prompt positrons at low transverse momentum increases with the square of the associated charged multiplicity.

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III. Photon Production in pp collisions.

6) A comparison of direct photon, π , and η production in pp and $p\bar{p}$ interactions at the CERN ISR.

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7) A study of the production of two direct photons in pp collisions at the CERN ISR.

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8) Inclusive η production at low transverse momentum in 63 GeV pp collisions at the CERN Intersection Storage Rings.

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9) Direct-photon plus away-side jet production in pp collisions at $\sqrt{s} = 63$ GeV and a determination of the gluon distribution.

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10) Search for direct γ production at low transverse momentum in 63 GeV pp collisions.

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11) Comparison of low- P_T photon production in high- and low-multiplicity collisions at the CERN ISR.

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12) High- P_T photon and π^0 production, inclusive and with a recoil hadronic jet, in pp collisions at $\sqrt{s} = 63$ GeV.

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IV. Jets in pp collisions.**13) The dominance of jets at large transverse energy in a full-azimuth hadron calorimeter at ISR energies.**

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14) Properties of jets in high- E_T events produced in pp collisions at $\sqrt{s} = 63$ GeV.

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15) Dijet production cross-section and fragmentation of jets produced in pp collisions at $\sqrt{s} = 63$ GeV.

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16) Three-jet production in pp collisions at $\sqrt{s} = 63$ GeV and a determination of α_s .

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17) Double parton scattering in pp collisions at $\sqrt{s} = 63$ GeV.

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V. Bose-Einstein correlations.**18) Bose-Einstein correlations in $\alpha\alpha$, pp and $p\bar{p}$ interactions.**

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19) Bose-Einstein correlations between kaons.

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20) Evidence for a directional dependence of Bose-Einstein correlations at the CERN Intersecting Storage Rings.

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21) Pion interferometry in jet events at the CERN Intersecting Storage Rings.

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VI. Search for new particles.

22) A study of exclusive central hadron production at the ISR as a search for gluonium states.

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23) A search for glueballs and a study of double pomeron exchange at the CERN Intersection Storage Rings.

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VII. Elastic scattering.

24) A measurement of alpha-alpha elastic scattering at the CERN ISR.

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VIII. Light ion collisions.

25) Search for quark deconfinement: Strangeness production in pp , dd , p α and $\alpha\alpha$ collisions at $\sqrt{s} = 31.5$ and 44 GeV.

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26) Measurement of $d\sigma/dE_T$ in collisions of light nuclei at $\sqrt{s} = 31.5$ GeV.

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27) Production of inclusive positrons at low P_T in 63 GeV pp collisions at the CERN ISR.

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28) Correlations between the Production of Prompt Positrons at Low Transverse Momentum and the Associated Charged Multiplicity.

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29) Production of low mass electron-positron pairs in proton-proton collisions at a center-of-mass energy of 63 GeV.

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Ph.D Thesis

30) Production of positrons with low transverse momentum and low-mass electron-positron pairs in proton-proton collisions at a center-of-mass energy of 63 GeV.

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