2 EXPERIMENTS AT THE OMEGA SPECTROMETER

The list of experiments is arranged as follows: experiment number, date of approval, date of completion (in brackets), purpose of the experiment and on a separate line, the collaborating institutions.

2.1 The first 5 years (up to 1976): OMEGA at the PS

Over the first 5 years, the OMEGA was mainly used as a 'triggered bubble chamber' for the study of hadronic interactions (with emphasis on small cross-section topical processes), of hadron spectroscopy and of production processes. This is much in line with what was initially planned in 1968–1970.

1. S 112–71 (1974) Non-strange meson spectroscopy (1.5–2 GeV)
   Birmingham, RHEL, Tel Aviv, Westfield.
2. S 113–71 (1973) Non-strange boson spectroscopy (1.5–2 GeV) with TOF trigger
   CERN, Bari, Bonn, Daresbury, Liverpool, Milan.
3. S 114–71 (1974) Baryon exchange in forward Λ production
   CERN, ETH, Karlsruhe, Freiburg, Saclay.
4. S 115–71 (1974) Strange baryon–antibaryon pair production
   Glasgow, Saclay.
5. S 116–71 (1974) Non-diffractive K* production
   CERN, ETH.
6. S 117–71 (1974) Baryon exchange in quasi two-body reactions
   CERN, Collège de France, Ecole Polytechnique, Orsay.
7. S 133–73 (1974) ππ scattering length
   CERN, Haifa, Saclay.
8. S 138–74 (1974 for test) K^+p at 14 GeV did not run
   Birmingham, Glasgow.
9. S 139–74 (1974) Rare decays of mesons. Inclusive production
   Bari, CERN, Daresbury, Glasgow, Liverpool, Milan, Purdue, Vienna.
10. S 145–75 (1975) Search for exotic hadrons
    CERN, Collège de France, Paris, Ecole Polytechnique, Orsay.
11. S 146–75 (1975) Charm search. Test of Zweig rules
    CERN OMEGA group.
12. S 148–75 (1975) Study of the Kππ system
    CERN, ETH, Aachen, Haifa.

2.2 The next 10 years (1976–86): OMEGA at the SPS; OMEGA´

The study of standard hadronic interactions started to decline, giving way to photoproduction, charm production and more generally QCD-motivated studies. Many research groups were clearly faithful to OMEGA, appearing on successive proposals.

13. WA 4–74 (1978) Photoproduction of hadrons
    Bonn, CERN, Ecole Polytechnique, Glasgow, Lancaster, Manchester, LAL Orsay, Paris-6, RAL, Sheffield.
14. WA 8–75 (1977) Meson production in K^+p and K^-p reactions
    Birmingham.
15. WA 12–76 (1977) Beam dump
    Birmingham, CERN, Ecole Polytechnique, Munich MPI, Neuchatel.
16. WA 13–76 (1978) p–$\overline{p}$ at large p_t
    CERN, Neuchatel, Collège de France.
17. WA 29–76 (1977) $\overline{p}$ annihilation at 20 GeV
    Liverpool.
18. WA 34–77 (1977) Charm photoproduction
    Bologna, CERN, Florence, Genoa, Paris-6, Santander, Valencia.
19. WA 37–76 (1977) Search for charmed particle in p–$\overline{p}$ collisions
    Aachen, CERN, Glasgow, Liverpool.
20. WA 39–77 (1978) Dimuon production
    Birmingham, CERN, Ecole Polytechnique.
21. WA 40–77 (1977) Search for narrow resonances in N–$\overline{N}$ channel
    Aachen, Bari, Bonn, CERN, Glasgow, Liverpool, Milan.
22. WA 45–77 (1978) Charm production (with emulsion)
    Bologna, CERN, Frascati, Rome.
23. WA 48–78 (1978) Baryonium states in K–p interactions
    Glasgow, Birmingham, CERN.
24. WA 49–78 (1979) Baryon exchange in p–$\overline{p}$ interactions
    CERN, Liverpool.
25. WA 55–78 (1979) K–p elastic scattering at 12 GeV
    CERN, Neuchatel, Collège de France.
26. WA 56–78 (1980) N–$\overline{N}$ states produced through baryon exchange
    CERN, Neuchatel, Ecole Polytechnique, Collège de France.
27. WA 57–79 (1979) High-mass vector mesons
    Bonn, CERN, Glasgow, Lancaster, Manchester, Paris-6, RAL, Sheffield.
28. WA 58–79 (1980) Photoproduction of charmed particles (emulsion)
    Bologna, CERN, Florence, Genoa, Lebedev, Paris-6, Santander, Valencia.
29. WA 60–79 (1979) Baryonium and Strangeonium production
    Bari, Birmingham, CERN, Milan, Paris-6, Pavia.
30. WA 63–80 (1980) Inclusive B–$\overline{B}$ production
    CERN, Saclay.
31. WA 67–80 (1981) Particle search with $K^+K^+K^-K^-$ in the final state
    CERN, Glasgow, Liverpool.
32. WA 69–81 (1986) High-energy photoproduction (70–200 GeV)
    Bonn, CERN, Erevan, Lancaster, Manchester, RAL, Sheffield.
33. WA 70–81 (1986) Direct photons in hadron collisions
    Geneva, Glasgow, Liverpool, Milan, Neuchatel.

34. WA 71–81 (1984) Beauty search
    CERN, Genoa, Milan, Lebedev, Paris-6 and -7, Rome, Santander, Valencia.
35. WA 72–81 (1982) Fast protons in π-nucleus interactions
    CERN, Lisbon, Neuchatel, Paris-6, Warsaw.
36. WA 74–82 (1982) p–$\bar{\text{p}}$ glory scattering
    CERN, Lisbon, Neuchatel, Paris-6.
37. WA 76–82 (1986) Inclusive central meson production
    Athens, Bari, Birmingham, CERN, Collège de France, Paris-6.
38. WA 77–82 (1987) Glueball search at high p_{t}
    Athens, Bari, Birmingham, CERN, Collège de France, Paris-6.

2.3 The last 10 years (1986–96)

The study of charm production yielded to that of beauty production, and glueball searches intensified. A strong heavy-ion programme focusing on strangeness production developed. In the latter cases collaborations became rather large.

39. WA 82–86 (1989) Charm hadroproduction (impact parameter trigger)
    Bologna, CERN, Genoa, Milan, Mons, Lebedev.
40. WA 83–86 (1986) Soft photon production
    Athens, Bombay, CERN, Lancaster.
41. WA 84–87 (1991) Production and decay of beauty particles
    Brussels, CERN, Imperial College, Pisa, Rome, RAL, Southampton.
42. WA 85–87 (1991) High p_{t} production in nucleus-nucleus collisions
    Athens, Bari, Bergen, Birmingham, CERN, Genoa, Madrid, Collège de France, Trieste.
43. WA 89–88 (1992) Hyperon beam experiment
    Bristol, CERN, Genoa, Grenoble, Heidelberg, MPI, Mainz, Lebedev, Rutgers.
44. WA 91–90 (1994) Glueball search
    Annecy, Athens, Bari, Belgium IISN, Bergen, Birmingham, CERN, Dubna, KEK, Oslo, Collège de France, Serpukhov.
45. WA 92–90 (1993) Beauty production and lifetimes
    Bologna, CERN, Dubna, Genoa, Imperial College, Lebedev, Pisa, Rome-I and II, Southampton.
46. WA 94–91 (1993) Baryon and antibaryon production in S–S collisions
    Athens, Bari, Bergen, Birmingham, CERN, Kosice, Legnaro, Madrid, Padova, Collège de France, Sepukhov, Strasbourg, Trieste.
47. WA 97–91 (1996) Baryon and antibaryon production in Pb–Pb interactions
    Athens, Bari, Bergen, Birmingham, CERN, Genoa, Kosice, Legnaro, Oslo, Padova, Collège de France, Prague, Rome, Salerno, Serpukhov, Strasbourg.
48. WA 102–94 (1996) Glueball search
    Annecy, Athens, Belgium IISN, Birmingham, CERN, Dubna, Los Alamos, Manchester, Serpukhov, KEK.

We would like to thank Giuseppe Fidecaro for his great help in the preparation of this survey of the OMEGA experimental programme.