

TESTS OF CP VIOLATION WITH  $K^0$  AND  $\bar{K}^0$  AT LEARBasle<sup>1</sup>-CERN<sup>2</sup>-CEN Saclay<sup>3,4</sup>-DAP Athens<sup>5</sup>-Democritos<sup>6</sup>-ETH<sup>7</sup>-  
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The intense and clean beams of antiprotons, available after ACOL is in operation, opens up the possibility of producing a large flux of tagged  $K^0$  and  $\bar{K}^0$  mesons. In this experiment we study with high precision, the CP-violating phenomena in the neutral kaon system, by measuring the interference effects and the asymmetries of the three chief decay amplitudes, i.e. the two-pion, the three-pion, and the semi-leptonic modes. This method of symmetrical production of particles and antiparticles in proton-antiproton annihilation at rest, and the identical detection of their decay products, has the advantage of minimizing the systematic errors and of allowing the detection of CP breakdown also in channels other than the two-pion one.

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