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Origins, Development, and Future of the TPC Idea

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The emergence of the Time Projection Chamber concept in February 1974 is an important milestone in the history of particle detection. A moment of inspiration led quickly through prototypes, and then to a prolonged struggle toward realization as a major detector for the Positron-Electron Project (PEP) at SLAC. In that era, rather different from today, radical ideas were able to gain traction. The TPC idea generated a true paradigm shift in our collective imagination and aspirations. Now, iconic images of thousands of particle tracks reconstructed in heavy ion collisions are commonplace and adorn book covers and agency reports. And yet, after forty some years, the TPC idea is being reinvented for new challenges. But was the TPC really invented in 1974, or perhaps much earlier?