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【607】 Spectral investigations on coaxial double transparent cathode discharges

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Gas discharges in transparent electrodes have been investigated in a double-cathode coaxial cylindrical system. Optimal working conditions for the discharges have been established. Spectral measurements of the optical emission have been performed to obtain discharge geometry and distribution profiles of the populations of excited and ionized gas particles. A well-defined less luminous plasma double layer has been observed surrounding a plasma fireball, tangent to a luminous space charged formation inside the inner cylinder. A peak has been observed at the end of the cylinders, both for temperature and for density. The cathode system is investigated to understand basic plasma physical processes.

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