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2.3 The resultant total helical magnetic field $B = B_T + B_\theta$ lines. The $B_T$ is shown by the solid lines, $B_\theta$ by the dashed half circle and $I_p$ is shown at the top by dashed line. The helical magnetic field lines connects the top and bottom of the plasma column, which causes the short circuiting of the vertical charging. In tokamaks, the poloidal magnetic field ($B_\theta$) is generated by the plasma current, and $B_\theta \ll B_T$.

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2.9 Plasma position measurement coils and limiter, (a) The plasma position measurement coils schematic, shown by spirals. Limiter is shown by the thick black circle. The location of coils should be at the midplane of outboard/inboard and top/bottom. In ADITYA, these coils are installed at the corners because of space limitation at the respective midplanes. (b) The limiter and the position coils in ADITYA. In this photograph only two outboard coils can be seen, and the other two are not in the view. The coils are shielded by the SS box to protect them from the heat and the capacitive pick ups.

3.1 Ion sheath formation at the interface of plasma and floating material. The region before the sheath is called presheath, which accelerates the ions to the ion acoustic speed $C_s$ at the sheath edge. The potential beyond the presheath is the plasma potential. The sheath thickness is $\sim 5\lambda_D$, where $\lambda_D$ is the Debye length. The speed of ions are shown by the dashed lines. For the electron sheath formation their is no need of presheath region.
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3.3 The probe current variation sketch with respect to the bias voltage $V_B$. This variation is normally referred as the probe characteristics. Probe current can be divided into three regions: (a) ion saturation current $I_s$ region, below the floating potential $V_f$, in this region only ions are collected at the probe and nearly all the electrons are repelled by the probe. (b) increasing part, this part is combination of ion current and increasing electron current, and (c) electron saturation current $I_{es}$ above the plasma potential $V_P$, in this region all the ions are repelled and only electrons are collected at the probe. The two dashed line represents the tangent to the rising part of the current and on electron saturation current, the intersection of two tangent lines is the $V_P$.

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3.5 Triple probe biasing scheme. Two floating power supplies are used to bias the probes. To keep the whole system floating, all measurements should be carried out carefully by taking one of the three probes as a reference ($P_1$, is reference probe).
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3.7 Triple probe biasing scheme for direct display of $T_e$, where $V_B$ and $R$ is biasing voltage and sensing resistance to measure probe current, respectively. This whole system is floating and the measurements are carried out with respect to the $P_1$ probe. The voltage measured across the $R$ gives information about the plasma density and the floating potential of probe $P_2$ ($V_{d2}$) with respect to the probe $P_1$ gives the $T_e$.

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3.9 Schematic of Mach probe in magnetic field, (a) top view of Mach probe, (b) view from one side (upstream). The upstream probe is the probe which faces the flow. The nomenclature of upstream and downstream is not universal. In tokamaks, sometimes the probe faces the plasma current is defined as the upstream and the other one as the downstream.

3.10 Schematic of ion collection by probe in strong magnetic field ($\rho_i < a$). The ion flux collected at the probe is provided by the cross field diffusion of the ions in the presheath region, indicated by the "Diffusive ion source". Presheath is elongated along the field direction. The length of this collection region along the field lines depend on the diffusion coefficient ($D_{\perp}$), ion acoustic speed ($C_a$) and on probe length ($l$). The collection length is given by $\sim C_a I^2 / D_{\perp}$. 

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