Two Methods of Phasing the Accelerator RF Systems with Self-Excitation, A. ALIMOV, O. CHUBAROV, D. ERMAKOV, B. ISHKHANOV, V. SHVEDUNOV, V. YAILIYAN, INP MSU, Moscow, Russia - Two methods of phasing the accelerator RF systems, in which the klystrons operate in a self-excited mode, are investigated. The first method uses a beam induced electromagnetic field to synchronize the frequencies of independent self-excited systems each consisting of accelerating section and a klystron. The parameters of the system: frequency detuning, coupling constant, beam current, klystron amplitude characteristic, necessary to obtain the stable acceleration, are analysed. The second method uses a reference signal from one of the positive feedback systems "klystron-accelerating section" to adjust the frequencies of other positive feedback systems in case of multi-section acceleration. This signal with fixed amplitude and phase characteristics is mixed to the feedback loops, adjusting their operation frequencies and relative phases of accelerating sections.