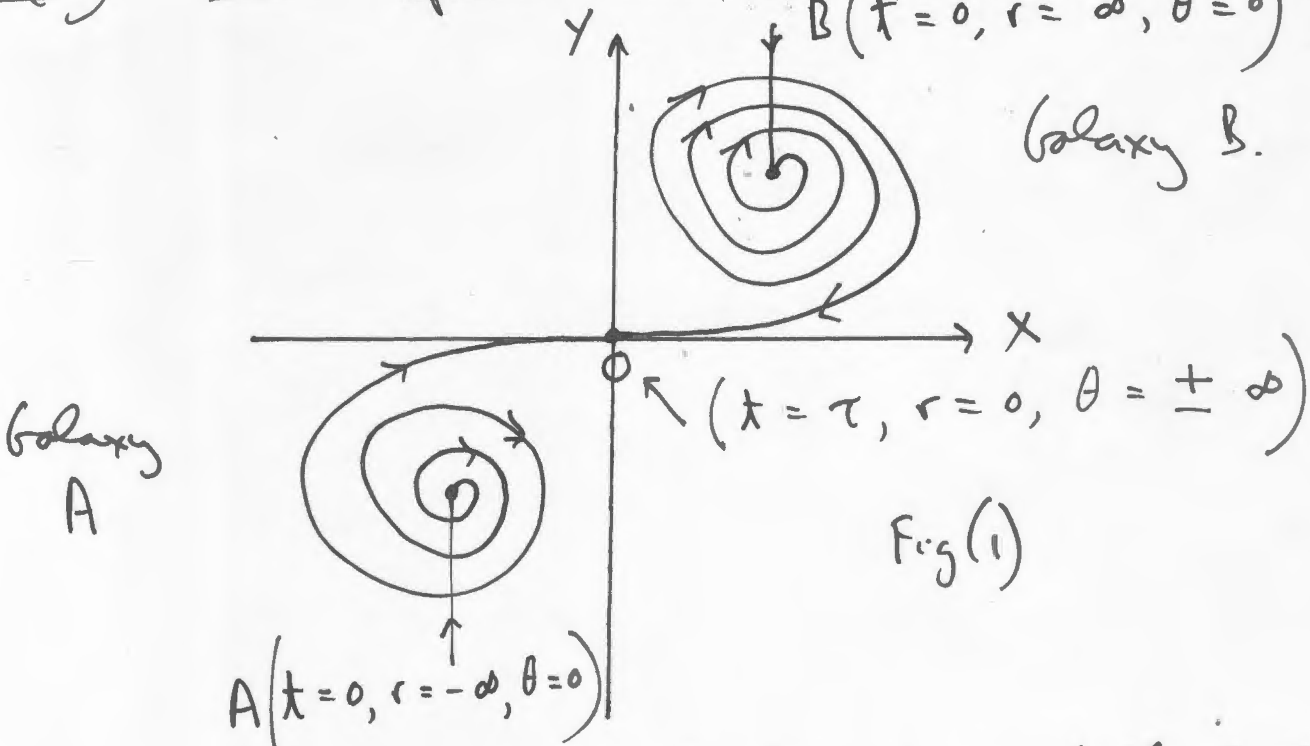
209(5): Double Spiral Orbit.



Fig(1)

The above figure is a schematic of a double spiral galaxy with overall rotation in a clockwise direction.

For galaxy A:

$$r^2 = X^2 + Y^2 \qquad -(1)$$

$$r = -(X^2+Y^2)^{1/2} = -\frac{r_0}{\theta} \qquad -(2)$$

$$X = r\cos\theta = -\frac{r_0}{\theta}\cos\theta \qquad -(3)$$

$$Y = r\sin\theta = -\frac{r_0}{\theta}\sin\theta \qquad -(4)$$

For galaxy B:

$$r^2 = X^2 + Y^2$$

$$r = (X^2+Y^2)^{1/2} = \frac{r_0}{\theta} \qquad -(5)$$

2)

$$X = r\cos\theta = \frac{r_0}{\theta}\cos\theta \quad - (6)$$

$$Y = r\sin\theta = \frac{r_0}{\theta}\sin\theta \quad - (7)$$

For galaxies A and B stars emerge from the galactic centres A and B due to overall clockwise torsion. The time origins are at A and B, where the angles θ are zero. In the figure is practical observation, $r \to \infty$ is replaced by a finite distance r_1 and $\theta \to \infty$ or $-\infty$ by finite angles θ_1 and $-\theta_1$.

The double helix galaxy is observed in astronomy to be out of one plane, and not to be perfect spirals. They are exceedingly complicated objects in a more realistic theory, but the major features are given by this theory.