## List of Figures

2.1	Variation of expansion scalar $\theta$ with time $t$ for $\alpha = 0.29$ , $\beta = 0.68$ .	42
2.2	Variation of anisotropy parameter $A_m$ with time $t$ for $\alpha = 0.29$ ,	
	$\beta = 0.68$ , k=.45, $X_1 =05$ , $X_2 =05$ , $X_3 = 0.1$	43
2.3	Variation of deceleration parameter q with time $t$ for $\alpha=0.29,\beta=0.68$	43
2.4	Variation of energy density $\rho$ with time $t$ for $\alpha = 0.29$ , $\beta = 0.68$ ,	
	k=.45, l=1.5, m=0.5, $X_1 = -0.05$ , $X_2 = -0.05$ , $X_3 = 0.1$	44
2.5	Variation of matter pressure p with time t for $\alpha = 0.29$ , $\beta = 0.68$ ,	
	k=0.45, l=1.5, m=0.5, $X_1 = -0.05$ , $X_2 = -0.05$ , $X_3 = 0.1$	44
3.1	The plot of effective pressure $\overline{p}$ vs. cosmic time $t$	56
3.2	The plot of proper density $\rho$ vs. cosmic time $t$	56
3.3	The plot of string tension $\lambda$ vs. cosmic time $t$	57
3.4	The plot of particle energy density $\rho_p$ vs. cosmic time $t$	57
3.5	The plot of isotropic pressure p vs. cosmic time $t$ for $q>0$	59
3.6	The plot of isotropic pressure p vs. cosmic time $t$ for $q < 0 \ldots$ .	60
4.1	Variation of energy density $\rho$ with time $t$ for $\lambda = 1.02, l = 1.12,$	
	$c_1 = 1.5, c_2 = .56 \text{ and } q = -0.4 \dots \dots \dots \dots \dots \dots \dots$	82

4.2	Variation of EoS parameter with time $t$ for $\lambda = 1.02$ , $l = 1.12$ ,
	$c_1 = 1.5, c_2 = .56 \text{ and } q = -0.4 \dots \dots$
4.3	Variation of $\delta(t)$ with time t for $\lambda = 1.02, l = 1.12, c_1 = 1.5, c_2 = .56$
	and $q = -0.4$
5.1	Variation of density $\rho$ with time $t$ for $\alpha = 0.12$ , $\beta = .83$ , $a_1 = 1.2$ ,
	$l = .78 \; \overline{\mu} = 1.00001 \; . \; . \; . \; . \; . \; . \; . \; . \; . \; $
5.2	Variation of pressure p with time t for $\alpha = 0.12$ , $\beta = .83$ , $a_1 = 1.2$ ,
	$l=.78$ and $\overline{\mu}=1.00001$
5.3	Variation of string tension density $\lambda$ with time $t$ for $\alpha = 0.12, \beta = .83$ ,
	$a_1 = 1.2, \ l = .78 \text{ and } \overline{\mu} = 1.00001 \dots 96$
5.4	Variation of $\rho_p$ with time t for $\alpha = 0.12, \beta = .83, a_1 = 1.2, l = .78$
	and $\overline{\mu}$ =1.00001
5.5	Variation of deceleration parameter q with time t for $\alpha = 0.12, \beta = 0.83$ 97
7.1	The plot of deceleration parameter $q$ vs. cosmic time $t$ 120
7.2	The plot of shear scalar $\sigma$ vs. cosmic time $t$ for m=1.5, n= 0.5, b=1.5122
7.3	The plot of matter density $\rho$ vs. cosmic time $t$ for m=1.5, b=1.5,
	$n=0.5 \text{ and } \lambda = 0.05 \dots 123$
7.4	The plot of pressure $p$ vs. cosmic time $t$ for m=1.5, b=1.5, n=0.5
	and $\lambda$ =0.05
7.5	The plot of Ricci scaler $R$ vs. cosmic time $t$ for m=1.5, b=1.5, n=0.5
	and $\lambda$ =0.05
7.6	Plot of sound velocity $v_s$ vs. $t$ for m=1.5, b=1.5, n=0.5 and $\lambda$ =0.05 125
7.7	Plot of WEC vs. time t for m=1.5, b=1.5, n=0.5 and $\lambda$ =0.05 126

7.8	Plot of DEC vs. time $t$ for m=1.5, b=1.5, n=0.5 and $\lambda$ =0.05	126
7.9	Plot of SEC vs. time $t$ for m=1.5, b=1.5, n=0.5 and $\lambda$ =0.05	126
8.1	Panel a indicates the variation of bulk viscous stress vs. time $t$ for	
	different values of $\alpha$ and $n=1.5$ and panel $b,\ c$ and $d$ represent	
	particle creation pressure for different values of $\alpha$ and for $\gamma=0, \gamma=1$	
	and $\gamma = 1/3$ and $n = 1.5$ respectively	140
8.2	Panel a represents variation of $\Pi$ with time $t$ for $n=1.5$ and b	
	represents variation of $p_c$ with time for $\gamma=0,\ \gamma=1,\ \gamma=\frac{1}{3}$ and	
	n = 1.5 respectively	142
8.3	Variation of $\Pi$ with time for $\gamma=0,\gamma=1,\gamma=\frac{1}{3}$ and $n=1.5$	143
8.4	Panel a and b represent variation of $\Pi$ and $p_c$ with time $t$ for $\gamma = 0$ ,	
	$\gamma = 1, \ \gamma = \frac{1}{3}$ and $n = 1.5$ respectively	145
8.5	Panel a indicates the variation of bulk viscous stress vs. time $t$ for	
	different values of $\alpha$ and $n=1.5$ and panel $b,\ c$ and $d$ represent	
	particle creation pressure for different values of $\alpha$ and for $\gamma = 0$ ,	
	$\gamma = 1$ and $\gamma = 1/3$ respectively	149
8.6	Panel a represents variation of $\Pi$ with time $t$ for $n=1.5$ and b	
	represents variation of $p_c$ with time $t$ for $\gamma = 0, \gamma = 1, \gamma = \frac{1}{3}$ and	
	n = 1.5 respectively	151
8.7	Variation of $\Pi$ with time $t$ for $\gamma = 0$ , $\gamma = 1$ and $\gamma = 1/3$	152
8.8	Panel a and b represent variation of $\Pi$ and $p_c$ with time $t$ respectively	
	for $\alpha = 0$ , $\alpha = 1$ , $\alpha = \frac{1}{2}$ and $\alpha = 1.5$	153