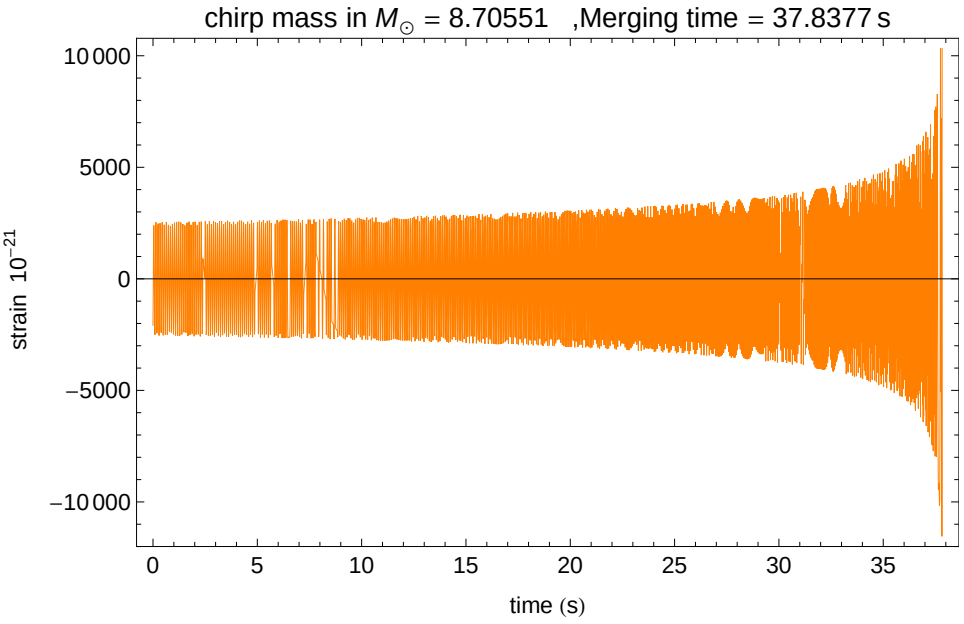
In[16]:=
```
ClearAll[f0, m1, m2, mchirp, M, r, d];
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
M = mchirp[m1, m2] * 4.92549095 * 10^-6;
d = r * 1.0292712503 * 10^8;
tmerg[M_, f0_] = 5 (256 (N[π] f0)^(8 / 3) M^(5 / 3))^-1;
F[M_, f0_, t_] =
  (M (f0)^9)^(1 / 8) ((M f0)^(1 / 3) - 256 f0^3 M^2 N[π]^(8 / 3) (t / 5))^(-3 / 8);
Angle[M_, f0_, t_] = -2 ((256 (N[π] M f0)^(8 / 3))^(-1) - (t / (5 M)))^(5 / 8);
Amplitude[M_, f0_, d_, t_] = 4 M^(5 / 3) N[π]^(2/3) (F[M, f0, t])^(2 / 3) d^(-1);
```

In[24]:=
```
m1 = 10;
m2 = 10;
f0 = 10;
r = 8 * 10^3;
```

In[28]:=
```
g1 = Plot[{Amplitude[M, f0, d, t] * Cos[Angle[M, f0, t]] * 10^21}, {t, 0, tmerg[M, f0]},
  PlotStyle → {Orange}, Frame → True,
  ImageSize → 500, BaseStyle → {FontFamily → "Arial", 12},
  PlotLabel → Row[{"chirp mass in ", Subscript[Style["M", Italic], "⊙"],
     " = ", N[mchirp[m1, m2]], "   ,Merging time = ", tmerg[M, f0] "s"}],
  FrameLabel → {"time (s)", (Subsuperscript["10", "", "-21"] ) " strain " }]
```

Out[28]=



In[29]:=

```
g2 = Plot[F[M, f0, t], {t, 0, tmerg[M, f0]}, PlotStyle → {Red}, Frame → True, ImageSize → 500,
  BaseStyle → {FontFamily → "Arial", 12}, PlotRange → {{0, tmerg[M, f0] + 1}, {0, 100}}
  , PlotLabel → Row[{"Chirp duration in s measured from ", f0, " Hz = ", tmerg[M, f0]}],
  FrameLabel → {"time (s)", "frequency (Hz)"}]
```

Out[29]=