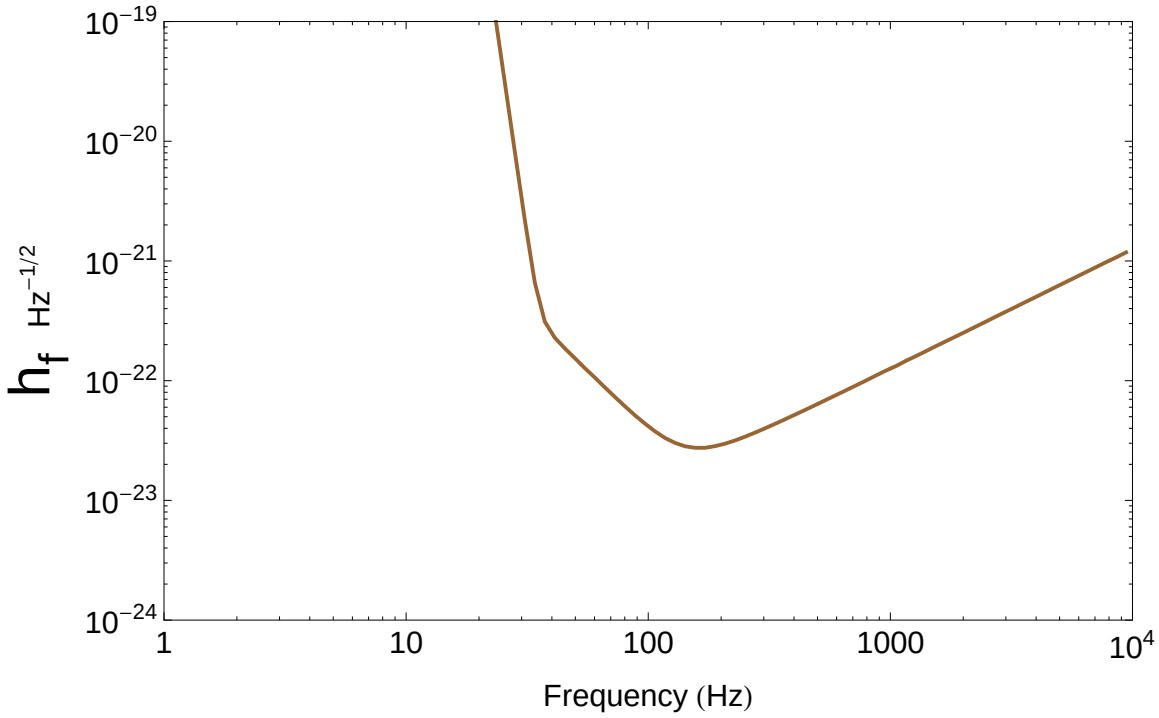
In[1039]:=

```
s0 = ListLogLogPlot[Import["D:\\oldligo.txt", "Table"],
  PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, Joined → True,
  PlotStyle → {{Thickness[Large], Brown}}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 16}, ImageSize → 600, Frame → True]
```

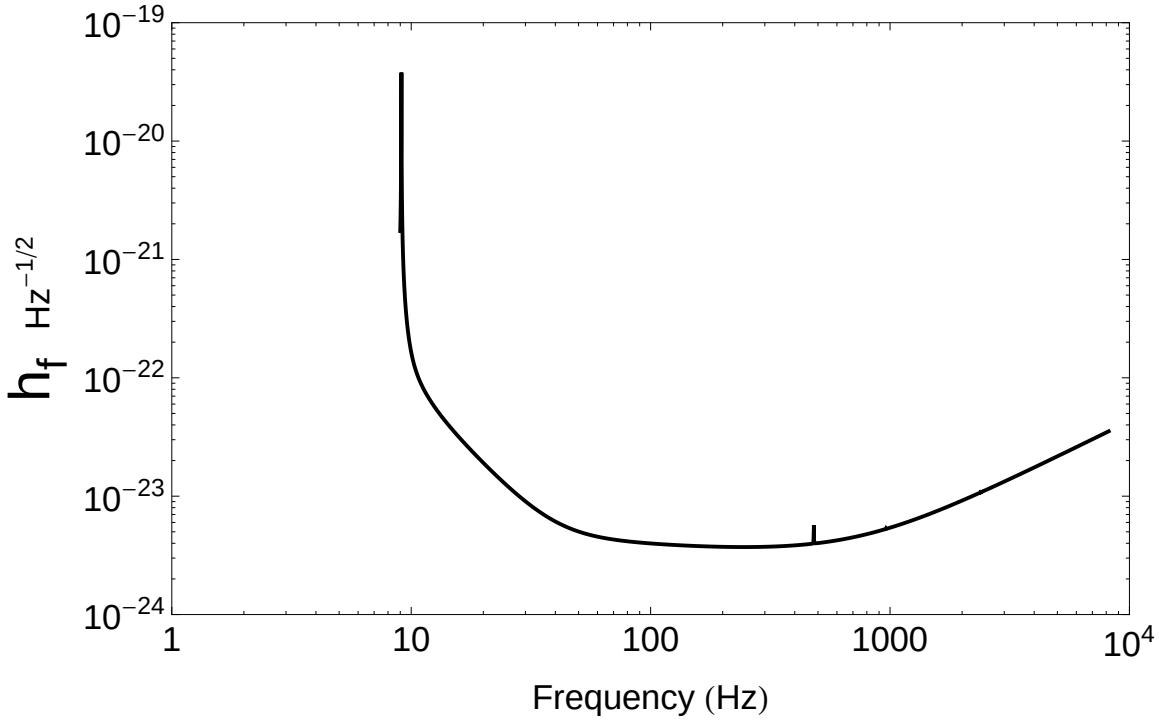
Out[1039]=



In[1040]:=

```
s1 = ListLogLogPlot[Import["D:\\aligo.txt", "Table"],
  PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, Joined → True,
  PlotStyle → {{Thickness[Large], Black}}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

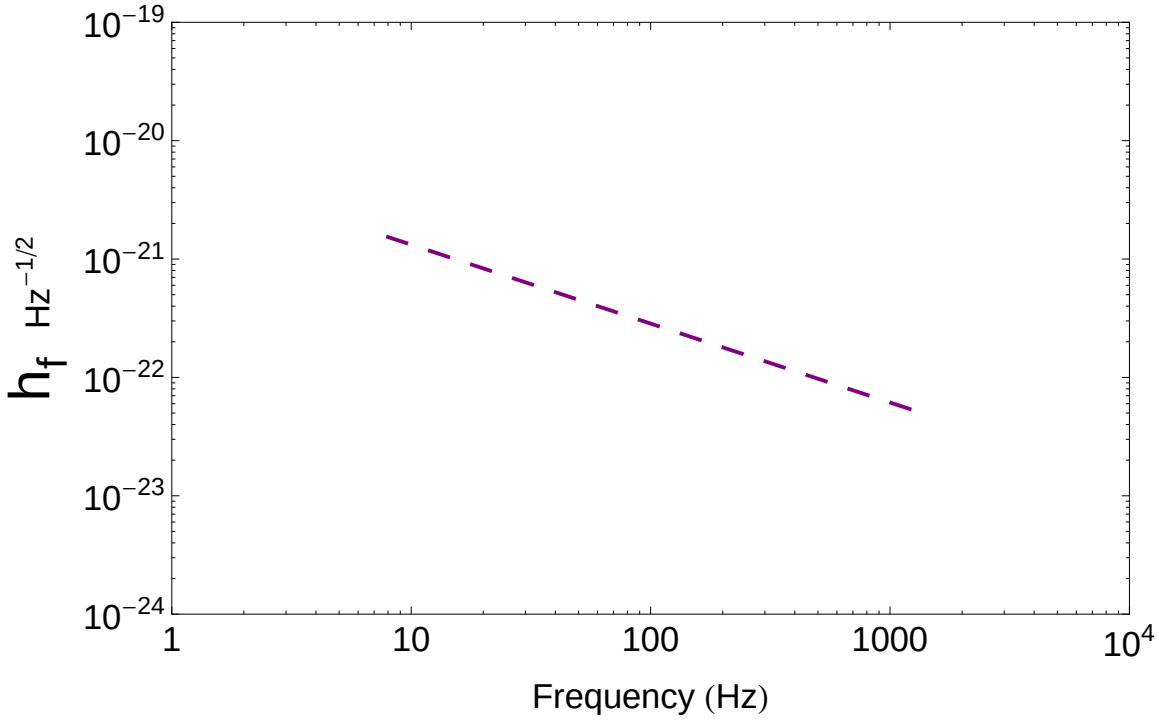
Out[1040]=



In[1041]:=

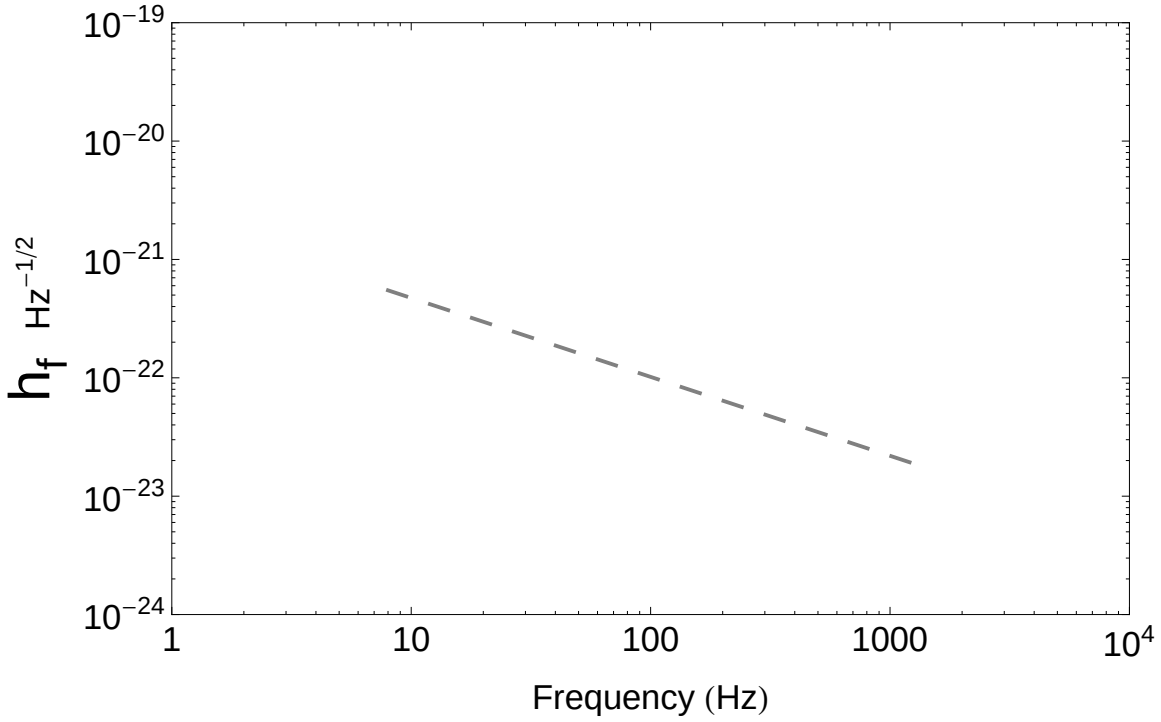
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 410 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);

Needs["PlotLegends`"]
s2 = LogLogPlot[{Amplitu[36, 29, f]}, {f, 8, 1500},
  PlotStyle → {{Dashing[Large], Thickness[Large], Purple}},
  PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

Out[1047]=



In[1048]:=
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 440 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);

Needs["PlotLegends`"]
s3 = LogLogPlot[{Amplitu[14.2, 7.5, f]}, {f, 8, 1500},
  PlotStyle → {{Dashing[Large], Thickness[Large], Gray}},
  PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

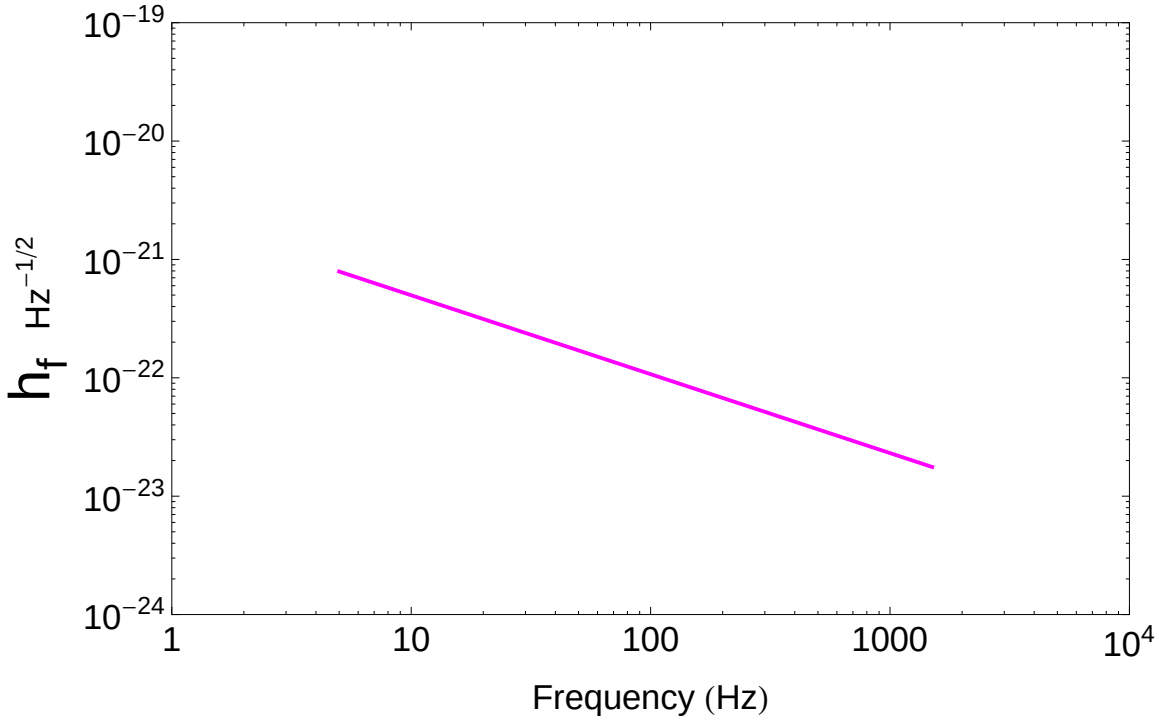
Out[1054]=



In[1055]:=

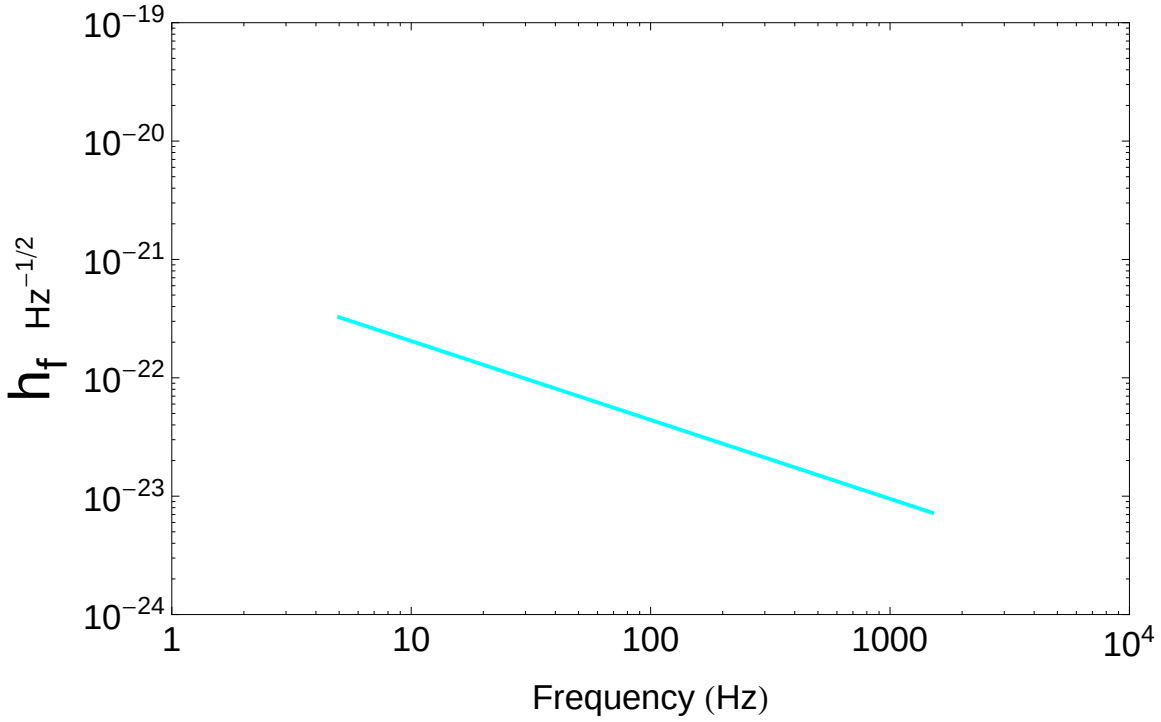
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 410 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);

Needs["PlotLegends`"]
s4 = LogLogPlot[{Amplitu[10, 10, f]}, {f, 5, 1500},
  PlotStyle → {{Thickness[Large], Magenta}}, PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

Out[1061]=



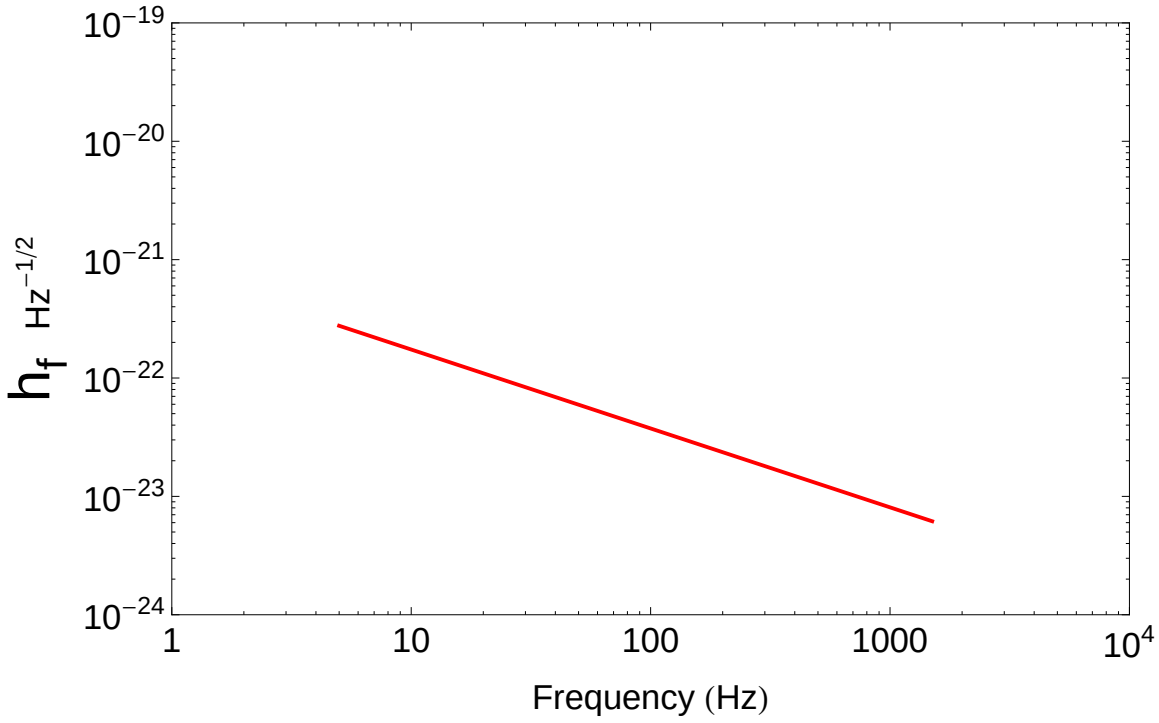
In[1062]:=
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 410 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);

Needs["PlotLegends`"]
s5 = LogLogPlot[{Amplitu[10, 1.4, f]}, {f, 5, 1500},
  PlotStyle → {Thickness[Large], Cyan}, PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

Out[1068]=



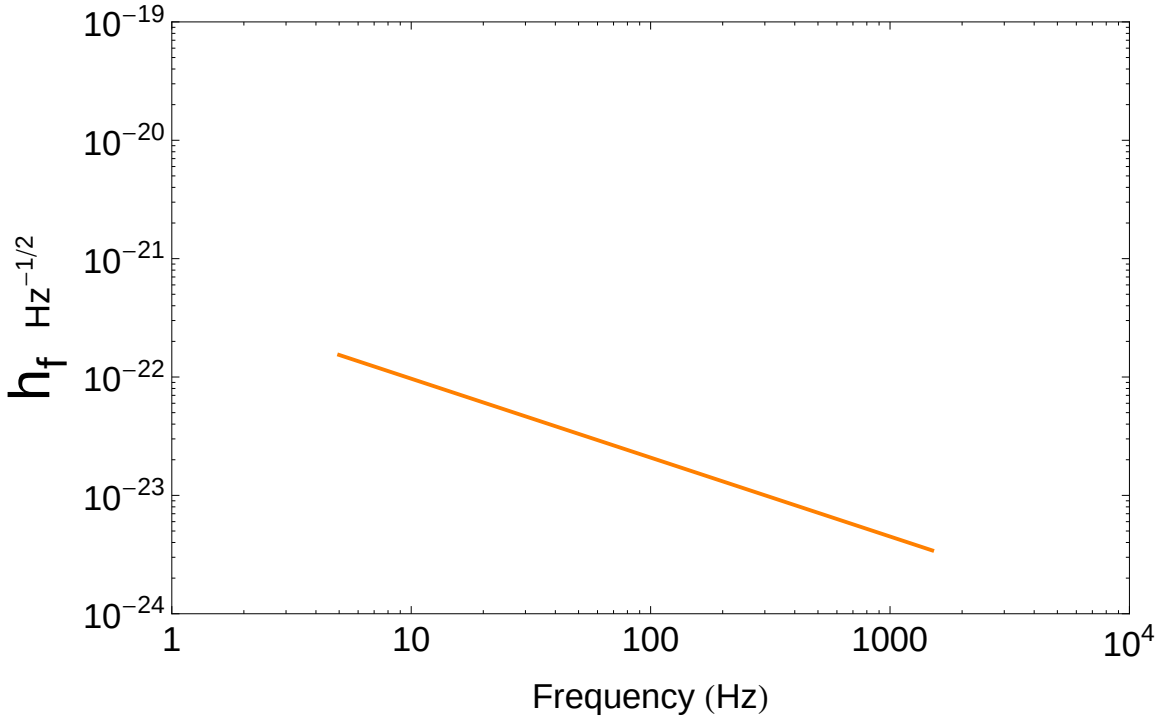
In[1069]:=
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 410 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);

Needs["PlotLegends`"]
s6 = LogLogPlot[{Amplitu[10, 1, f]}, {f, 5, 1500},
  PlotStyle → {Thickness[Large], Red}, PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

Out[1075]=



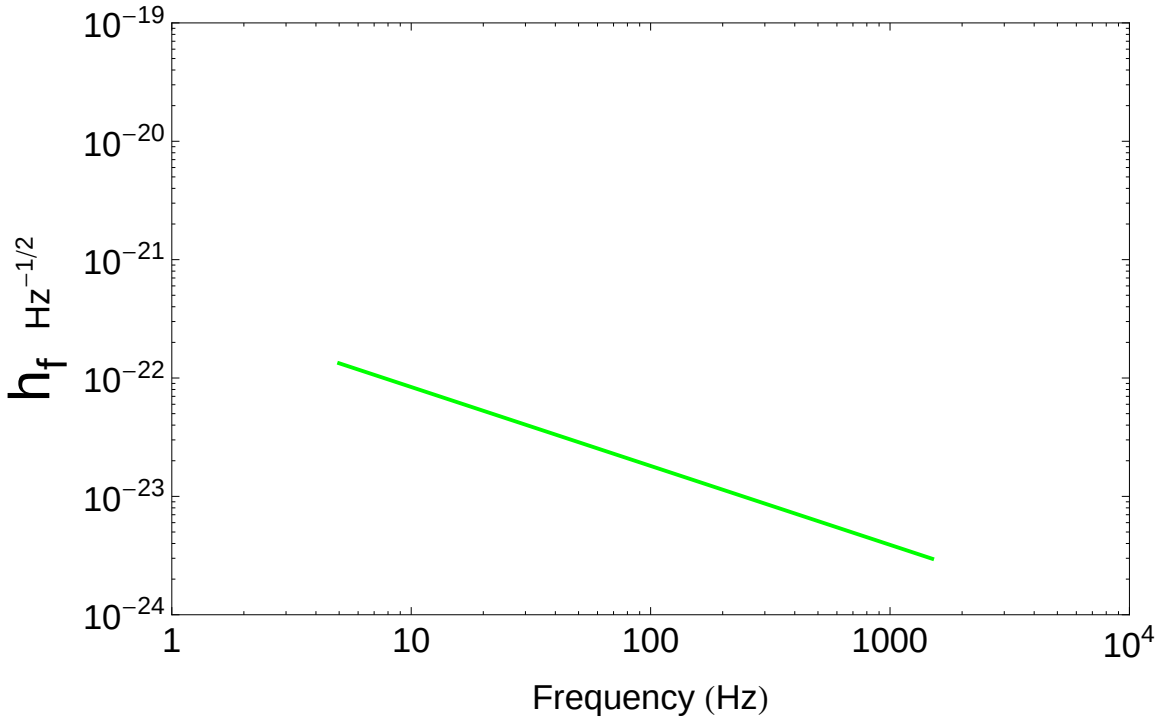
In[1076]:=
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 410 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);
Needs["PlotLegends`"]
s7 = LogLogPlot[{Amplitu[1.4, 1.4, f]}, {f, 5, 1500},
  PlotStyle → {Thickness[Large], Orange}, PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

Out[1082]=



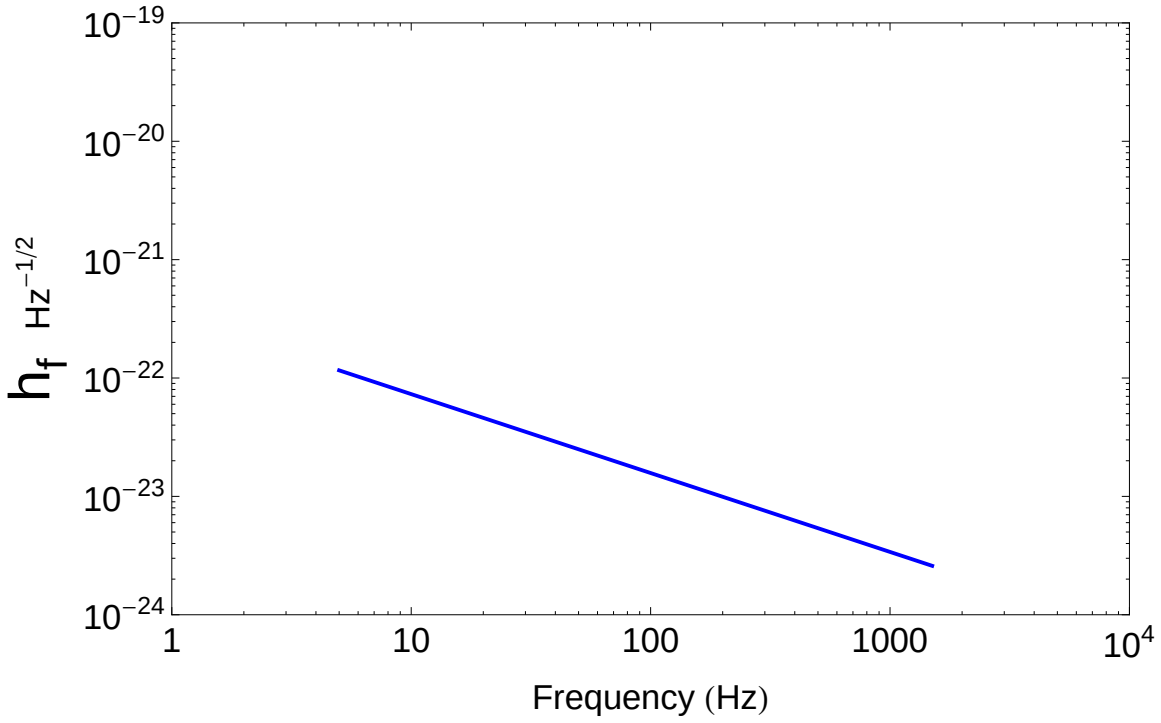
In[1083]:=
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 410 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);

Needs["PlotLegends`"]
s8 = LogLogPlot[{Amplitu[1.4, 1, f]}, {f, 5, 1500},
  PlotStyle → {Thickness[Large], Green}, PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

Out[1089]=



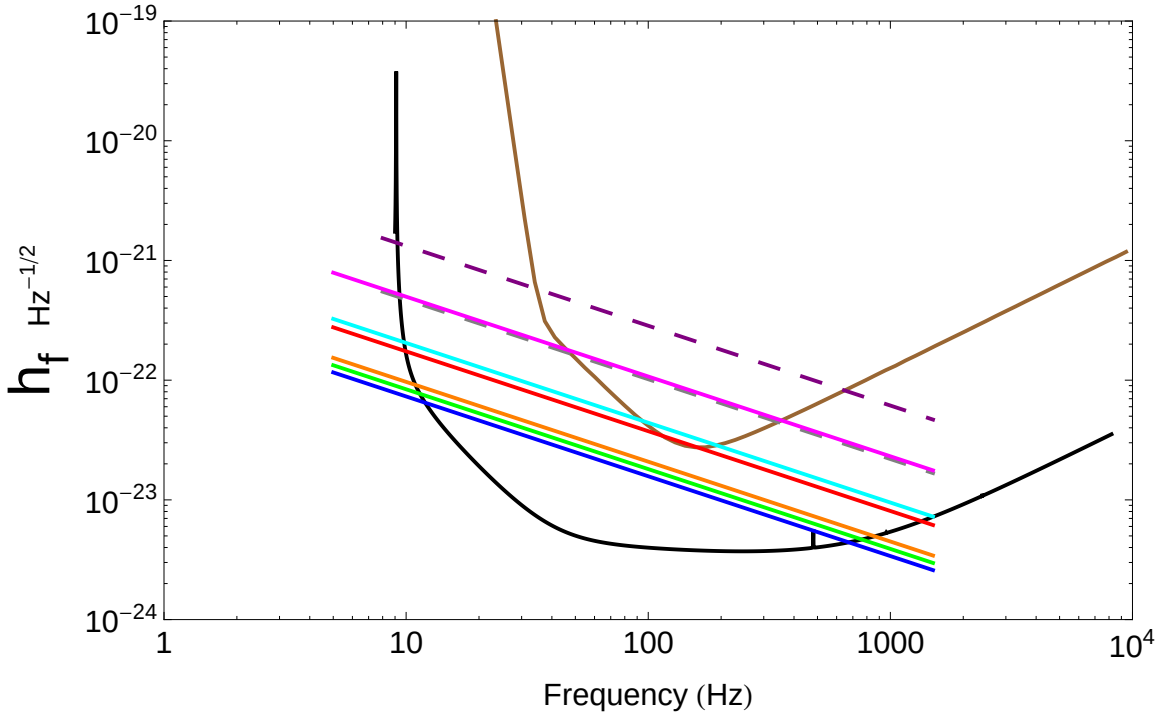
In[1090]:=
```
ClearAll[m1, m2 , mchirp, M, r, d, Amplitu]
d = r * 1.0292712503 * 10^8;
r = 410 * 10^6;
mchirp[m1_, m2_] = (m1 m2)^(3 / 5) (m1 + m2)^(-1 / 5);
Amplitu[m1_, m2_, f_] = (mchirp[m1, m2] * 4.92549095 * 10^-6)^(5 / 6) *
   d^(-1) * (3.14)^(-2 / 3) * (5 / 6)^(1 / 2) * f^(-2 / 3);

Needs["PlotLegends`"]
s9 = LogLogPlot[{Amplitu[1, 1, f]}, {f, 5, 1500},
  PlotStyle → {Thickness[Large], Blue}, PlotRange → {{1, 10^4}, {10^-24, 10^-19}},
  Ticks → {Table[{10^i, Superscript[10, i]}, {i, 0, 4}],
    Table[{10^i, Superscript[10, i]}, {i, -24, -19}]}, FrameLabel → {"Frequency (Hz)",
    (Subscript[Style["h", 30], Style["f", 22]]) (Subsuperscript["  Hz", "", "-1/2"])},
  BaseStyle → {FontFamily → "Arial", 18}, ImageSize → 600, Frame → True]
```

Out[1096]=



In[1097]:= **Show[s0, s1, s2, s3, s4, s5, s6, s7, s8, s9]**

Out[1097]=



In[1100]:=

```
Needs["PlotLegends`"]
ShowLegend[Show[s0, s1, s2, s3, s4, s5, s6, s7, s8, s9],

 {{{Graphics[{Brown, Thickness[Large], Line[{{0, 0}, {4, 0}}]}],
    Style["LIGO sensitivity", Bold, 13]},
   {Graphics[{Black, Thickness[Large], Line[{{0, 0}, {4, 0}}]}],
    Style["aLIGO sensitivity", Bold, 13]},
   {Graphics[{Purple, Dashing[Medium], Thickness[Large], Line[{{0, 0}, {4, 0}}]}],
    Style["GW150914", Bold, 13]},
   {Graphics[{Gray, Dashing[Medium], Thickness[Large], Line[{{0, 0}, {4, 0}}]}],
    Style["GW151226", Bold, 13]}, {Graphics[
     {Magenta, Thickness[Large], Line[{{0, 0}, {4, 0}}]}], Style["BH-BH", Bold, 13]},
   {Graphics[{Cyan, Thickness[Large], Line[{{0, 0}, {4, 0}}]}], Style["BH-NS", Bold, 13]},
   {Graphics[{Red, Thickness[Large], Line[{{0, 0}, {4, 0}}]}], Style["BH-WD", Bold, 13]},
   {Graphics[{Orange, Thickness[Large], Line[{{0, 0}, {4, 0}}]}], Style["NS-NS", Bold, 13]},
   {Graphics[{Green, Thickness[Large], Line[{{0, 0}, {4, 0}}]}], Style["NS-WD", Bold, 13]},
   {Graphics[{Blue, Thickness[Large], Line[{{0, 0}, {4, 0}}]}], Style["WD-WD", Bold, 13]}},
  LegendSize → {0.7, 0.75}, LegendPosition → {0.95, -0.2}, LegendShadow → None}]
```

Out[1101]=