```
In[ ]:= eq = h + u^2 * h / 2 + r * u - u^3 / 2

In[ ]:= deq = D[eq, u]

In[ ]:= sol = Solve[deq == 0, u]

In[ ]:= umin = sol[[1, 1, 2]]
        umax = sol[[2, 1, 2]]

In[ ]:= eqhcmin = eq /. u → umin;

In[ ]:= solmin = Solve[eqhcmin == 0, r][[1, 1, 2]];

In[ ]:= solsimp = solmin /. h^b_ /; b > 4 → 0;
        solsimp = solsimp /. Sqrt[h^4] → h^2;
        solsimp = solsimp /. h^b_ /; b ≥ 4 → 0

        SetDirectory[NotebookDirectory[]];
        << MaTeX`
        PBstyle =
          {PlotStyle → {{Thickness[0.005], Red}, {Thickness[0.005], Blue}}, Frame → True,
           FrameStyle → Directive[Black, Thickness[0.003], 9, FontFamily → "Euclid"],
           GridLines → Automatic, ImagePadding → {{30, 2}, {37, 4}}, AxesLabel → Automatic };
        xticks = {0, 5};
        yticks = {0, 8};
        xlabel = "h";
        ylabel = "r(h)";
        origin = {-100, -100};
        fig = Plot[{solmin, solsimp}, {h, -5, 5}, Evaluate@PBstyle, PlotRange →
            {{Min[xticks], Max[xticks]}, {Min[yticks], Max[yticks]}}, AxesOrigin → origin,
          FrameLabel → {MaTeX[xlabel], MaTeX[ylabel]}, ImageSize → {{210}}]
        Export["bifurcation_curves.pdf", fig, ImageResolution → 1000, ImagePadding → None]
```