One patch, without effect of microbes on pollinators

This creates plots of equilibria for the one-plant model without feedbacks between microbes and pollinators, and with low and high yeast dispersal rates (keeping bacterial dispersal rates constant). We have to redefine the plot below so I can plot equilibrium abundances by the more intuitive constant pollinator-mediated dispersal rate $\left(\frac{P}{L_0 + P}\right)$ instead of L_0. This script results in the following files:

- `1 patch – h0 – dy0.9 – equil – PLP.pdf`
- `1 patch – h0 – dy1.1 – equil – PLP.pdf`

These files are used in figure 2, panels a and b, respectively.

Load package and set working directory:

In[27]:=
```
Needs["EcoEvo`"];
SetDirectory[NotebookDirectory[]];
SetDirectory[ParentDirectory[] <> "/_figures/_raw-nb"];
```

Define model and set constant parameters:

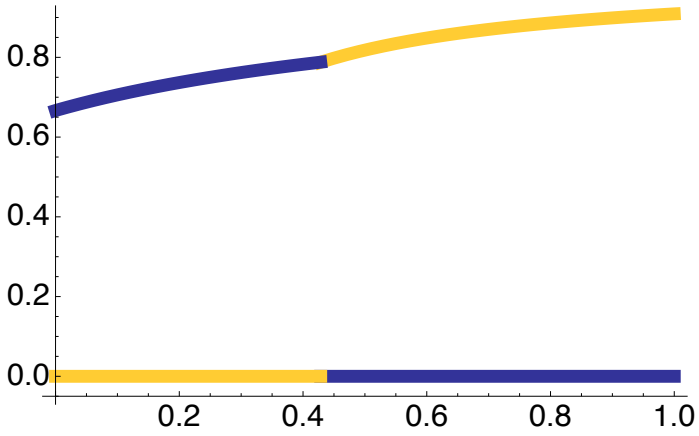
In[30]:=
```
SetModel[{Pop[Y] → {Equation :↦ dy PLP Y (1 - Y - B) - m Y,
      Range :↦ Interval[{0, 1}], Color → RGBColor["#FFCC33"]},
   Pop[B] → {Equation :↦ (db0 + db PLP) B (1 - Y - B) - m B,
      Range :↦ Interval[{0, 1}], Color → RGBColor["#333399"]},
   Parameters :↦ {dy ≥ 0, db0 ≥ 0, db ≥ 0, m ≥ 0, PLP ≥ 0}}];
db = 0.4;
db0 = 0.3;
m = 0.1;
```

High yeast dispersal

In[34]:=
```
Clear[dy];
dy = 1.1;
p = PlotEcoEq[SolveEcoEq[], {PLP, 0, 1},
  UnstableStyle → {Opacity[0]}, StableStyle → {Thickness[0.02]},
  PlotRange → {{0, 1}, {-0.05, 1.5}}, AxesOrigin → {0, -0.05},
  AxesLabel → {None, None},
  LabelStyle → {FontFamily → "Helvetica", 16, GrayLevel[0]}]
Export[File["1patch-h0-dy1.1-equil-PLP.pdf"], p];
Clear[p];
```

Solve : Solve was unable to solve the system with inexact coefficients. The answer was obtained by solving a corresponding exact system and numericizing the result.

Out[36]=



Low yeast dispersal

In[39]:=
```
Clear[dy];
dy = 0.9;
p = PlotEcoEq[SolveEcoEq[], {PLP, 0, 1},
  UnstableStyle → {Opacity[0]}, StableStyle → {Thickness[0.02]},
  PlotRange → {{0, 1}, {-0.05, 1.5}}, AxesOrigin → {0, -0.05},
  AxesLabel → {None, None},
  LabelStyle → {FontFamily → "Helvetica", 16, GrayLevel[0]}]
Export[File["1patch-h0-dy0.9-equil-PLP.pdf"], p];
Clear[p];
```

Solve : Solve was unable to solve the system with inexact coefficients. The answer was obtained by solving a corresponding exact system and numericizing the result.

Out[41]=