Hive Simulation

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Stefan Gugler, Elias Huwyler, Fabian Tschopp

December 15, 2013

Outline

Simulation results and analysis

Evolution of the model

Missing flower season comparison

- Spring
- Summer

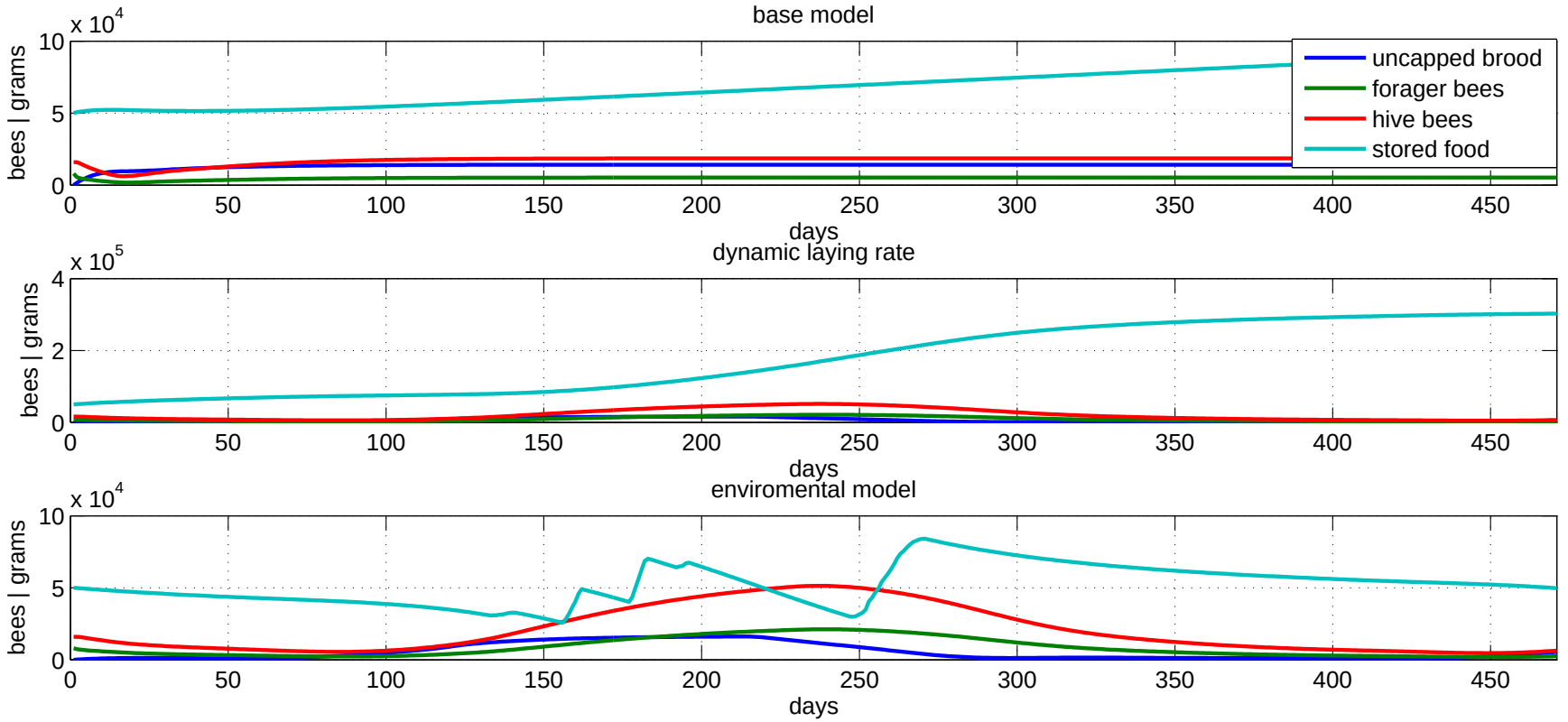
Critical points in the fall season

- Death criteria:
- Overview

Simulation results and analysis

- Evolution of the model
- Missing flower season comparison
- Critical points in the fall season

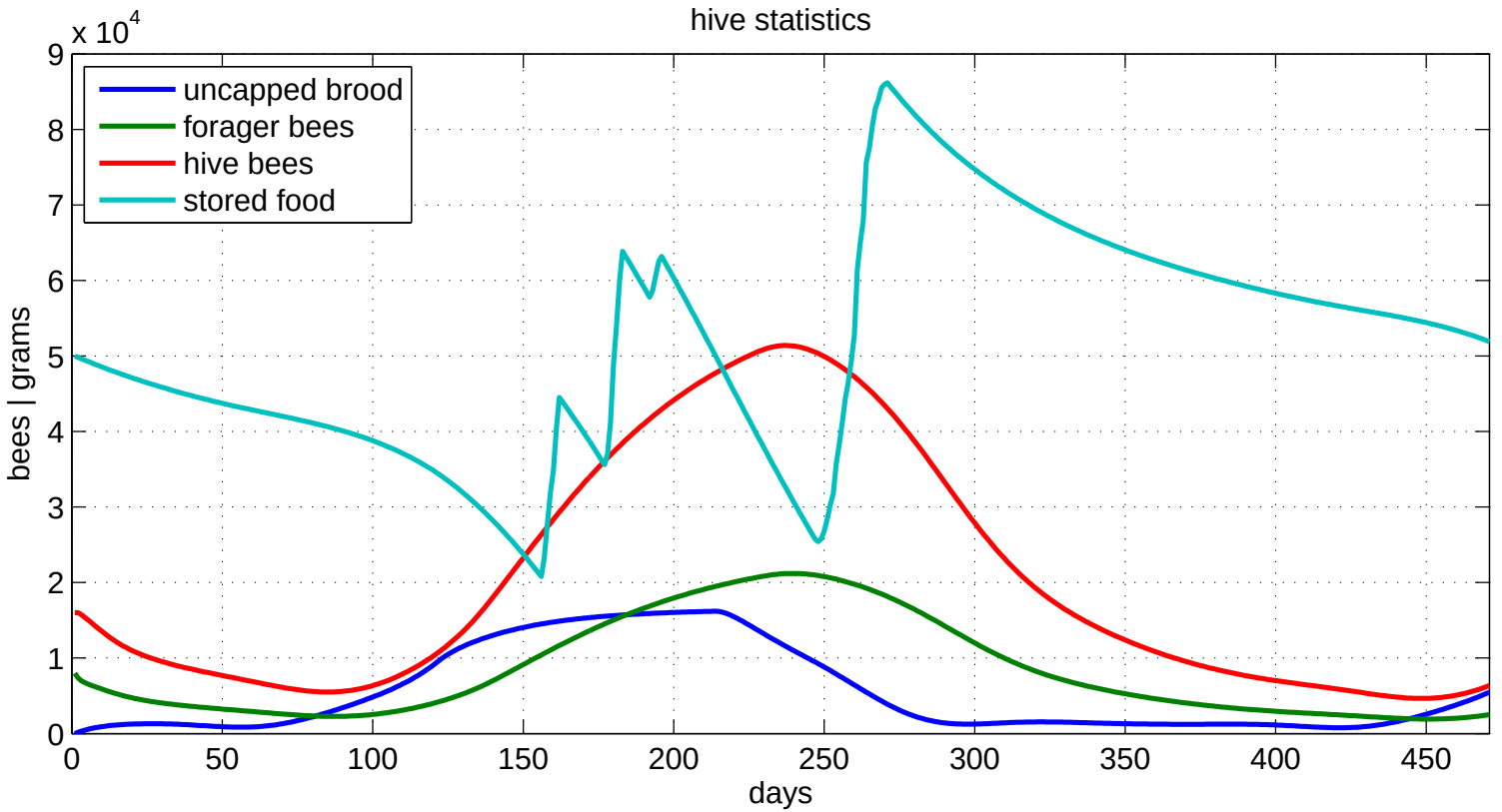
Evolution of the model



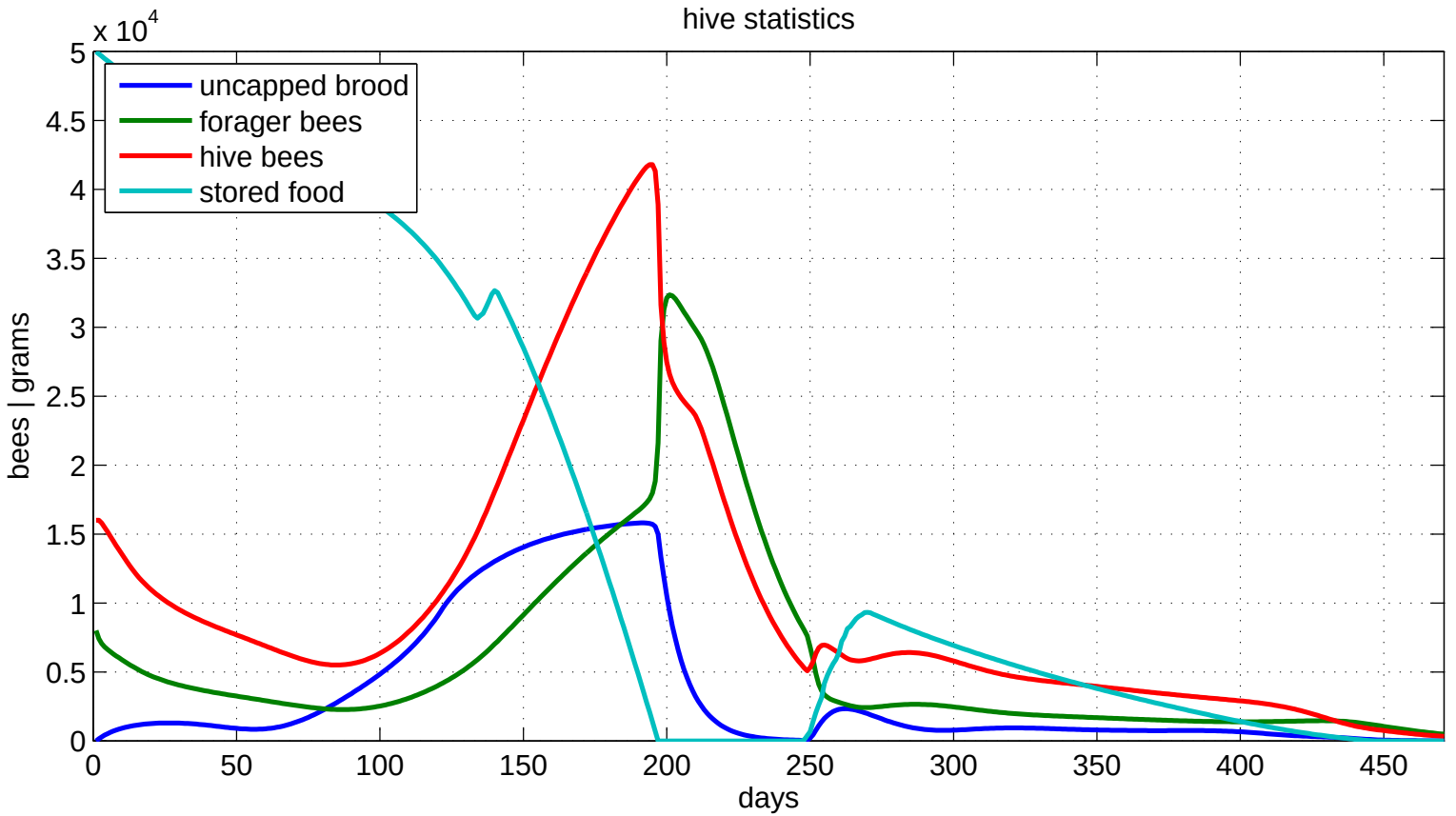
Missing flower season comparison

- Eliminate non critical seasons
- Study effects of missing season
- Observe the hives compensation measures

Spring


hive statistics
x 10^4
uncapped brood
forager bees
hive bees
stored food
bees | grams
days
0
1
2
3
4
5
6
7
8
9
0
50
100
150
200
250
300
350
400
450

Summer


hive statistics
x 10^4
uncapped brood
forager bees
hive bees
stored food
bees | grams
days
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0
50
100
150
200
250
300
350
400
450

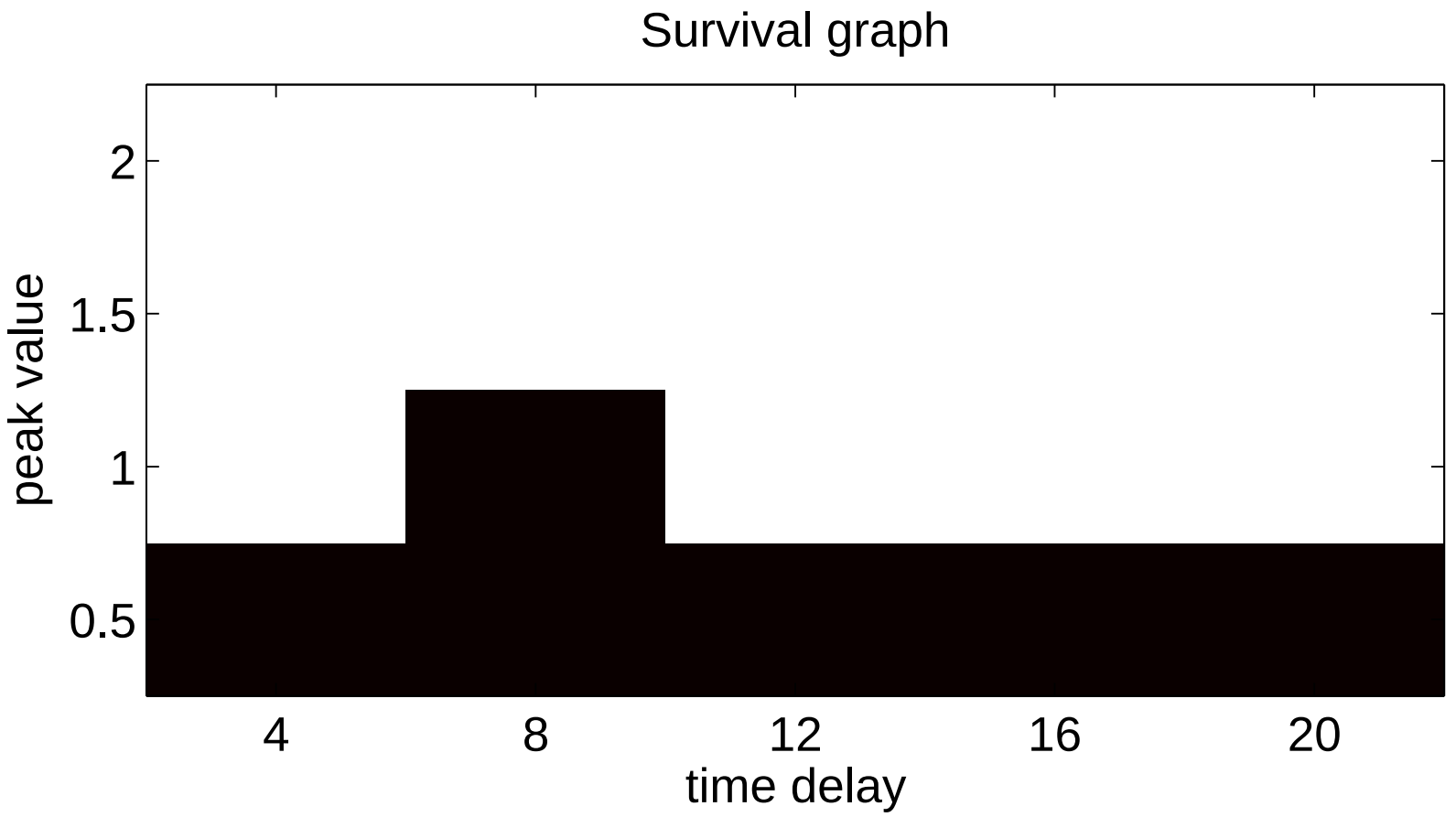
Critical points in the fall season

Death criteria:

- Less than 1000 bees at day 400
- Less than 20kg of stored food at day 400

Hive Simulation

Overview



Questions?