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# Early Detection of Mastitis in Dairy Cattle through Sensor Data Combination

## 2018/03/20 DairyCare Thessaloniki


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# Cow Health Monitor

- InnovateUK 102083
- Supporting farmers in tackling animal health challenges
  - Metabolic diseases, such as ketosis and acidosis
  - Lameness
  - Mastitis

# Partners

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Fullwood

AHDB

afimilk®
Vital know-how in every drop

SRUC

ADC
EXPERTS IN GAS ANALYSIS

Supported by the EPSRC CDT in Intelligent Sensing and Measurement Grant Number EP/1016753/1.

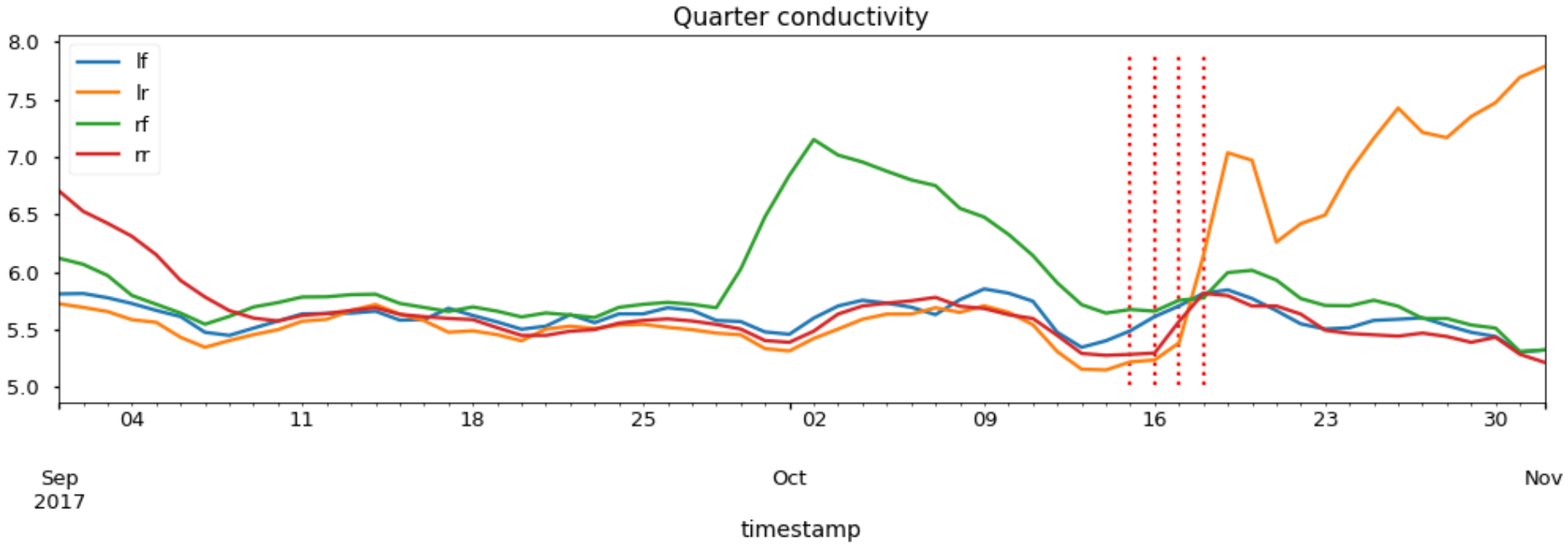
# Trial summary

- Trials on both research and commercial farms
  - SRUC Dumfries
  - Parkend Farm, Cowdenbeath (Agri Epi)
- Robot milkers and behaviour monitoring collars
  - Daily budget for rumination and eating behaviours
  - Milk conductivity
  - Constituents: fat, protein, lactose
  - Milking trends: visits/day, milking pattern, contribution, yield
- Across both trials, 300+ days of data across 200+ animals
- Mixture of lactation stages and parity

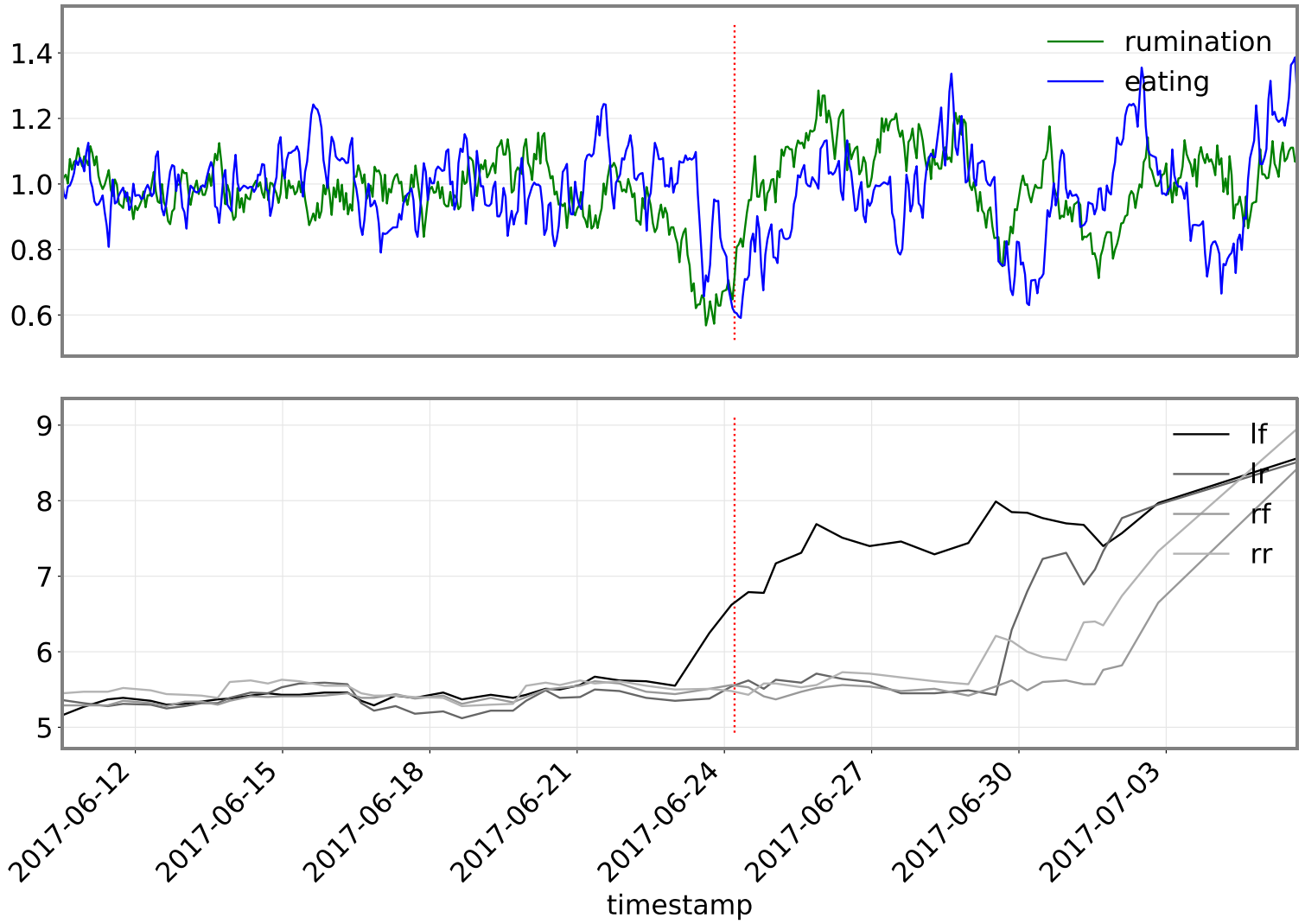
# Commercial Trial

- ~170 cows (HF)
- Behaviour monitoring collars
- 4 Robot milkers
- After 9 months:
  - 32 cases of mastitis across 28 cows
- ~30+ cases of lameness (around 24%), but not covered here

# Milk Conductivity



# ...& Rumination/Eating



# Avoid false positives

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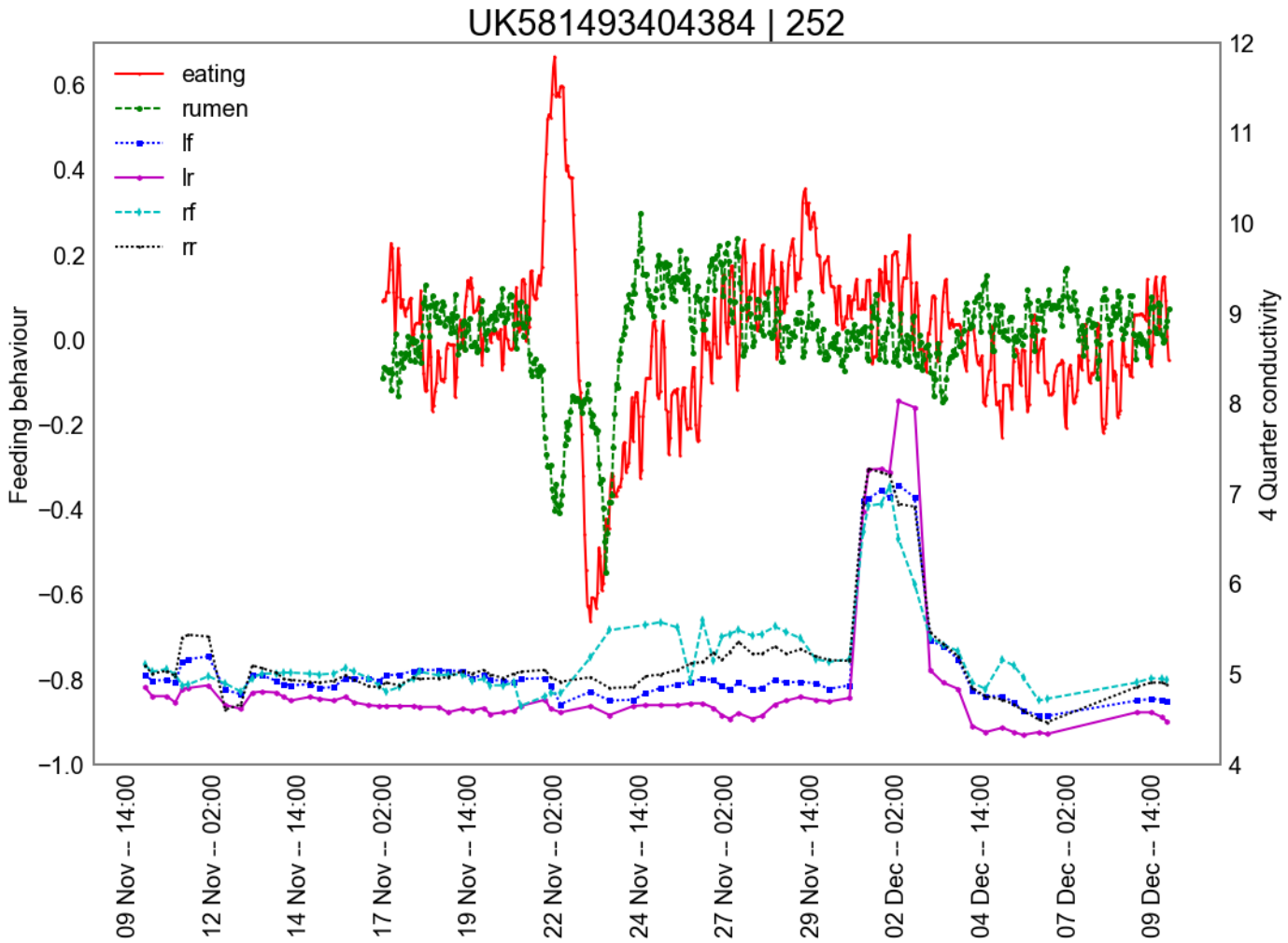
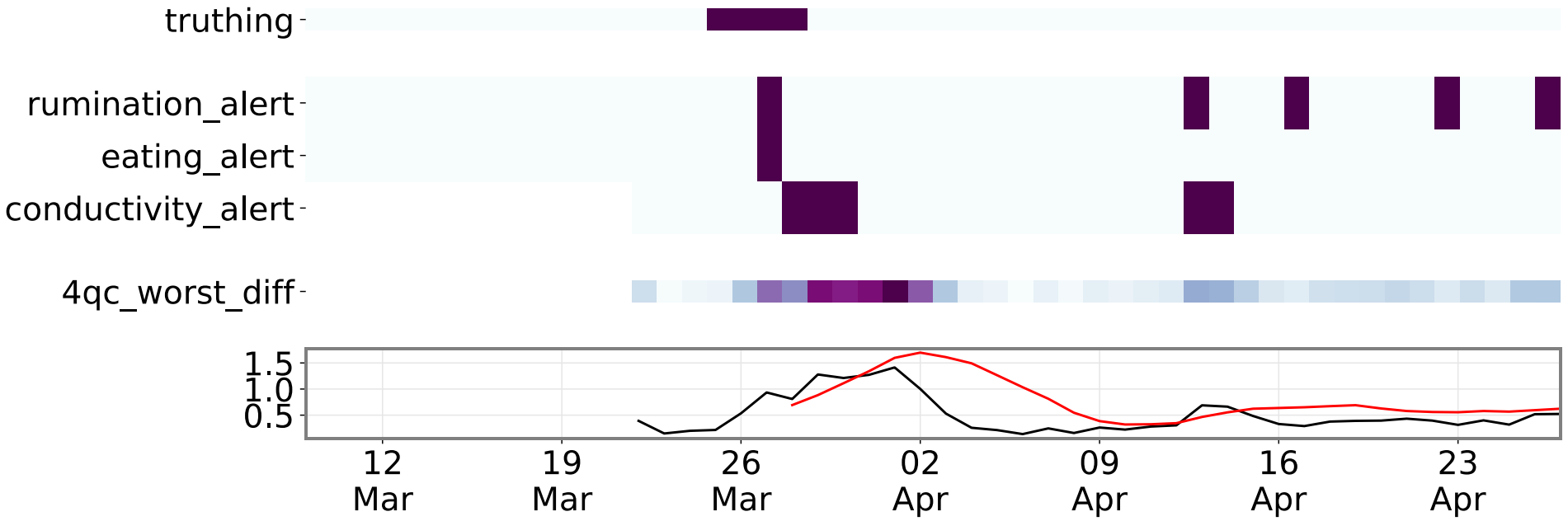
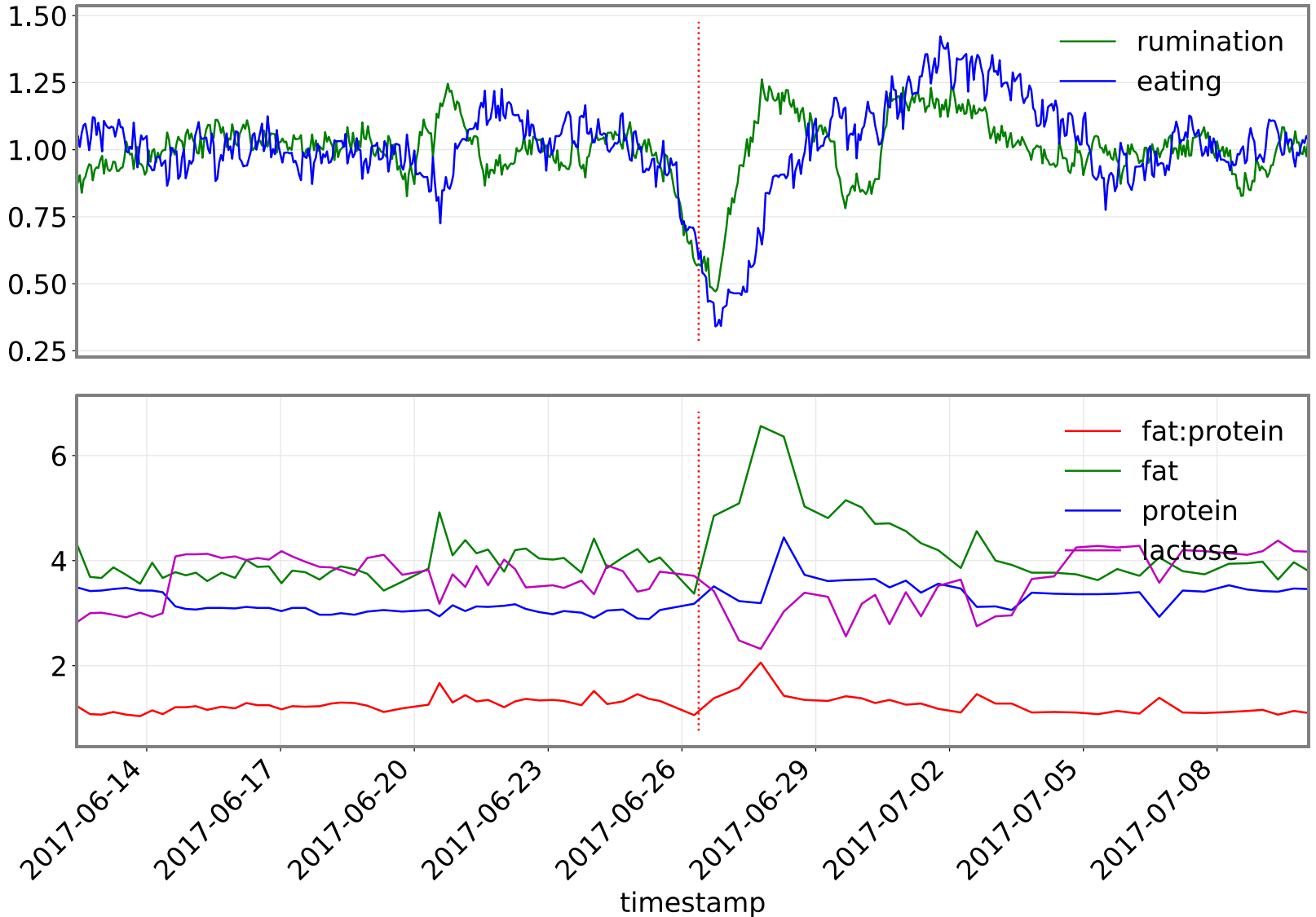


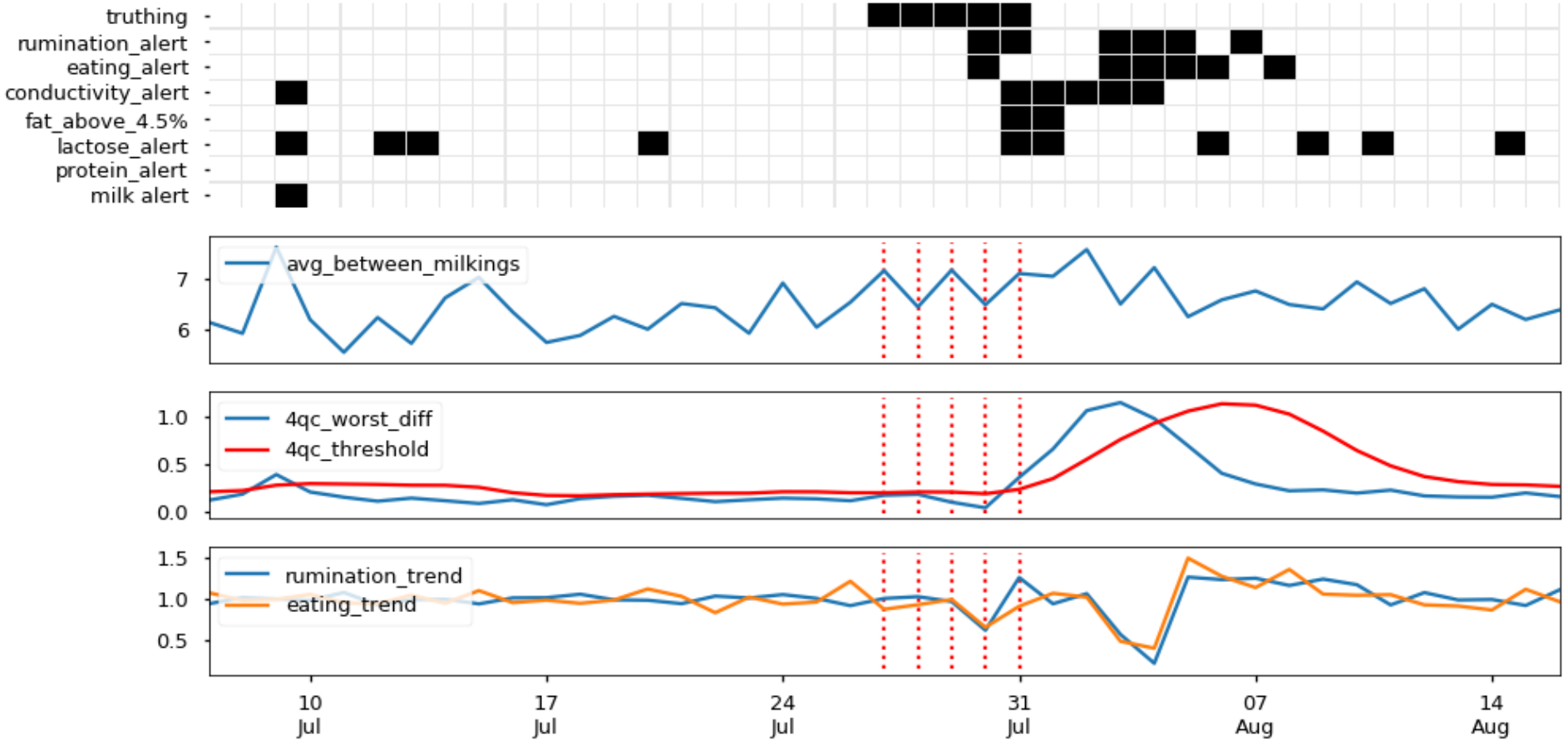
# Reinforce true positives



# Milk Constituents



# Rumination, eating, conductivity, and milk constituents



# Conclusion

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- Alerts before farmer:
  - 80/90% have rumination + eating change
  - 50% have fat increase
  - 70% have an increase in time-between-milkings
- Need long-term commercial evaluation
  - Impact on herd health statistics
- Make use of extensive data
  - Other welfare events (e.g. lameness, ketosis)
  - Increase sensitivity and specificity

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