



SCIENCE AND
EDUCATION **FOR**
SUSTAINABLE
LIFE

Can automatic records of activity predict maternal ability and health in sows?

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Lameness

Common reason for culling

Welfare issue

Difficult to record



Piglet mortality and leg health

Mortality of liveborn piglets to a large part explained by crushing

Frequency of movements

Manner of moving



Aim of study

Explore if general activity can be used as an indicator for lameness

Relationship between activity and litter performance



Material and methods

Sows farrowing at Research Centre Lövsta, Uppsala

Free farrowing pens with straw – enter at approx. one week before farrowing

Purebred yorkshire, and a group of crossbred sows



Activity records

Accelerometers, Onset HOBO
Pendant G



At entry of farrowing pen and for
some repeated during lactation



Lameness

Tecscan Walkway/Strideway pressure mat

Stride length, speed, pressure on each individual hoof



Lameness

Tecscan Walkway/Strideway pressure mat

Stride length, speed, pressure on each individual hoof



Data

115 recorded periods of activity, 94 individual sows

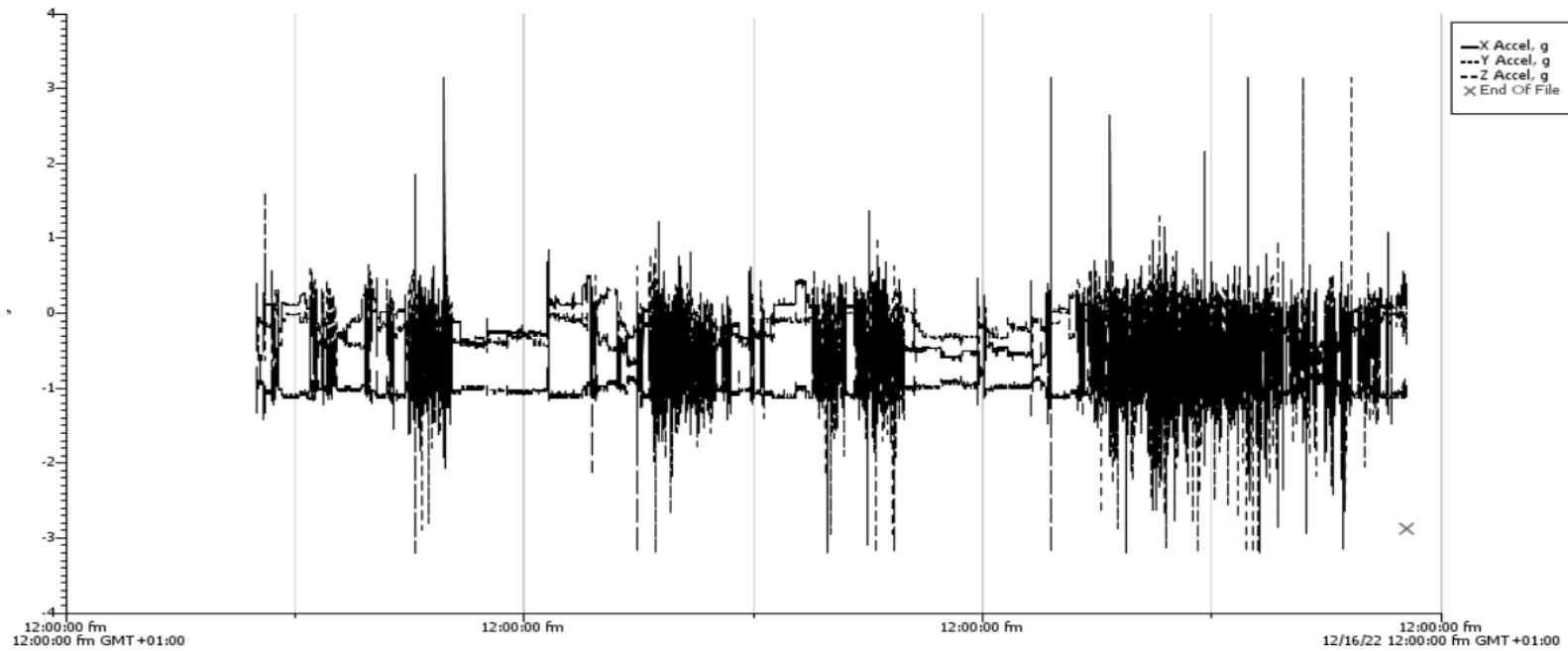
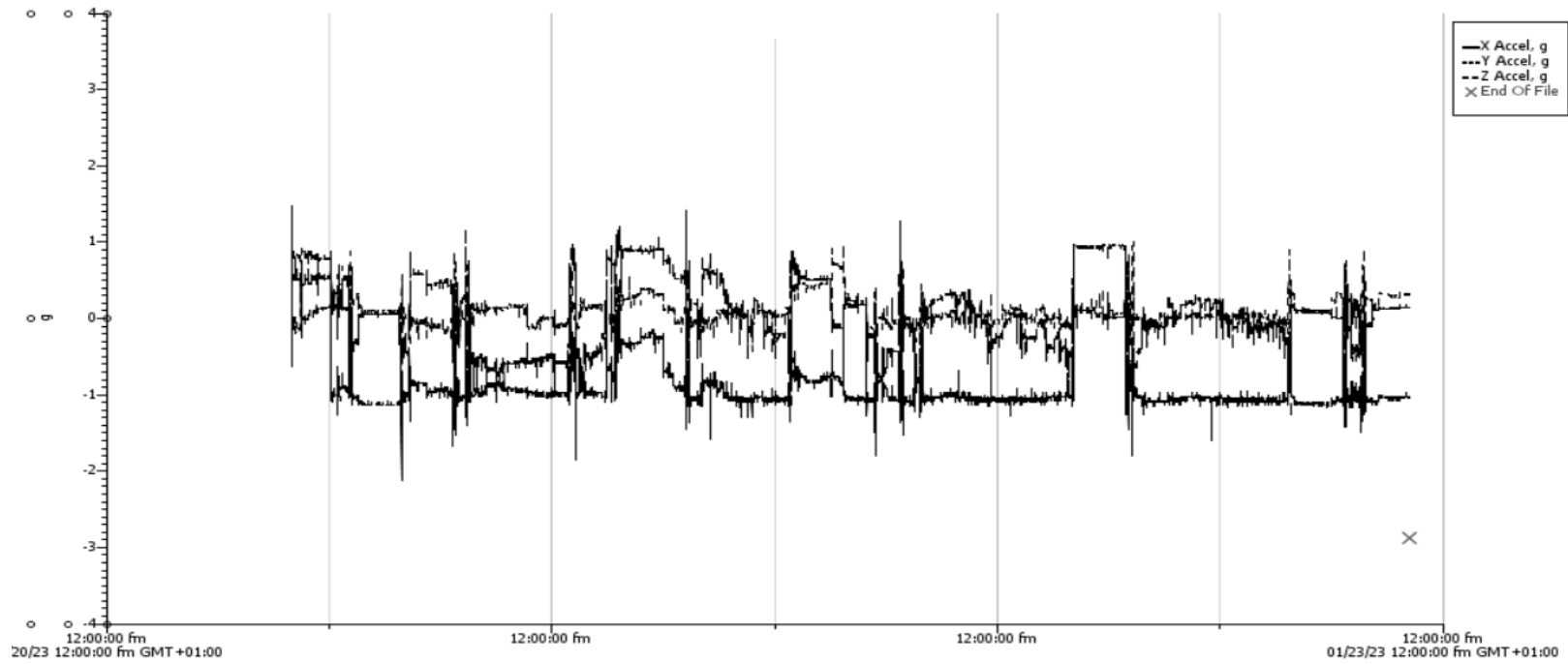
Start of recording	Duration	No of sows
Apr. 5 days before farrowing	2.5 days	57
At weaning / one week into lactation	2.5 days	21
Approx 5 days before expected farrowing	7.5 days	37

19 sows with data from the pressure mat

Individual piglet weights at birth and weaning

Dead piglets weighed, cause of death determined by staff





Activity records

General activity:

$$x_2 - x_1 = x_{21}$$

$$y_2 - y_1 = y_{21}$$

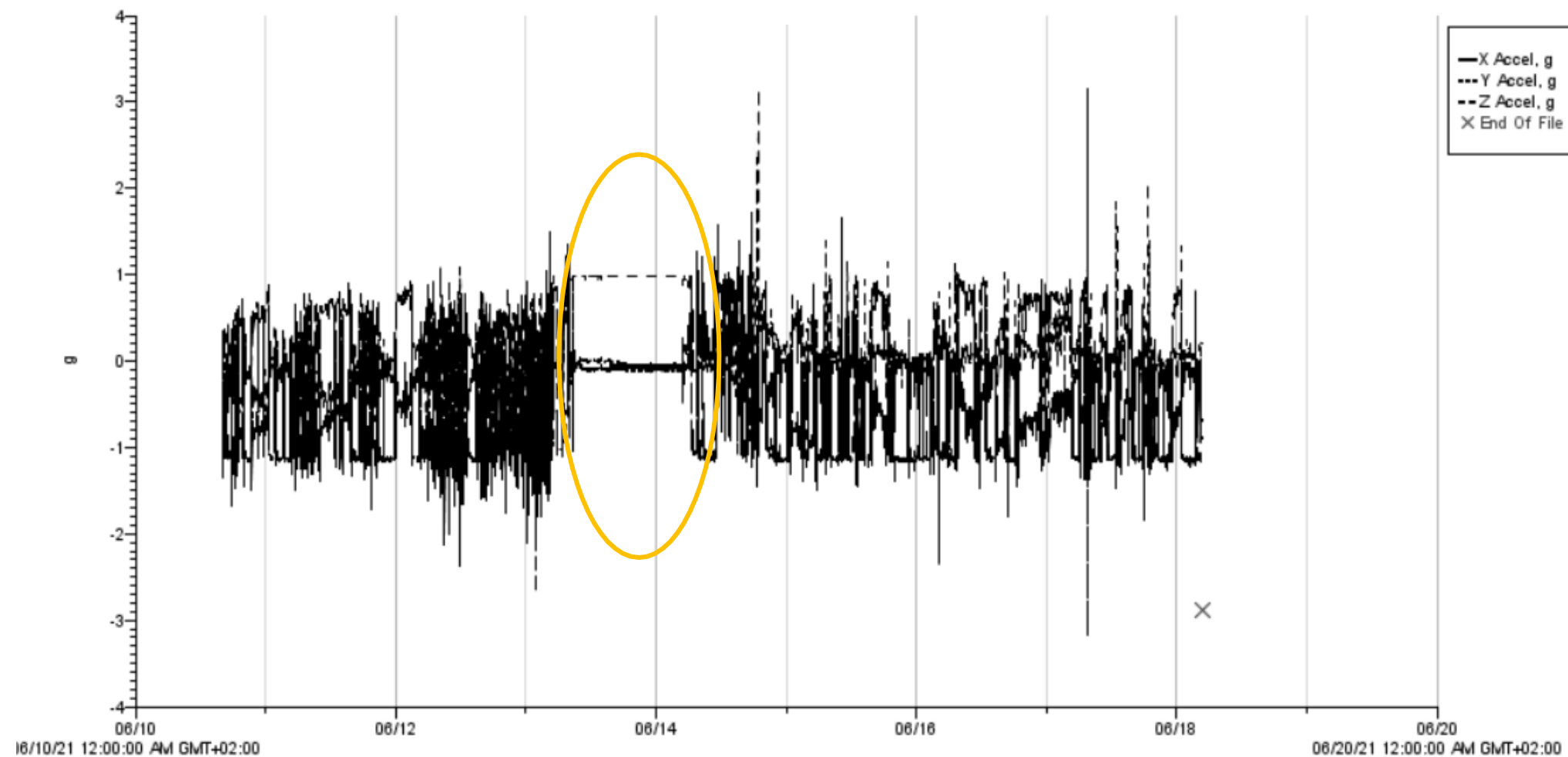
$$z_2 - z_1 = z_{21}$$

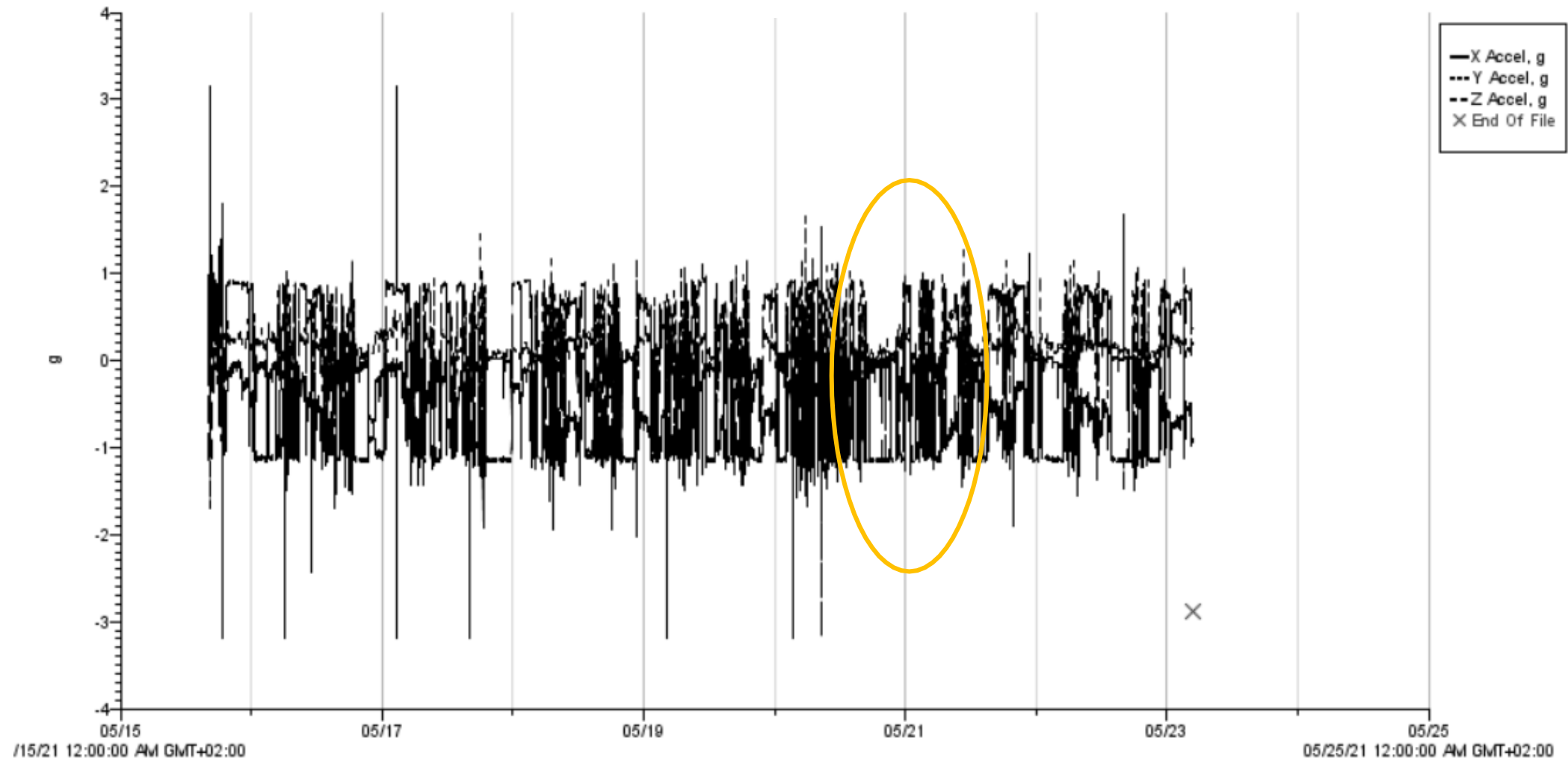
$$\text{Activity}_{21} = |x_{21}| + |y_{21}| + |z_{21}|$$

Sum total, night, morning, day,
evening

Day before farrowing, farrowing day







Results so far

Variation in activity – individually and over the day/night

Most active in the early morning, least active during the night

No correlation between activity and piglet survival and growth

12 of 19 sows were classified as lame on at least one leg

Lame sows had significantly fewer crushed piglets

No correlation between lameness and activity



Results so far

Piglets are little monsters that chew up all equipment..



Thank you for your attention!

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