

DATA COLLECTION AND PREPARATION FOR GENETIC ANALYSIS OF METHANE EMISSIONS IN DANISH DAIRY CATTLE

T.M. VILLUMSEN, P. LØVENDAHL, V. MILKEVYCH R. KROGH, H. SCHNEIDER, M. BJERRING, G. SAHANA



GHQ P D UNÀ#F DUER Q #WD [

Ohj dō| #e lqg lqj #5363#fōp dñ#j dv#hgxfwrq#vdj hw

Ihhg#dgg lwhv#h {shfwng#r#eh#p dggdwrj

Vxj j hwng#d {#fhdulrv#

F duerq#hp lwrq#d {#1 : #57#ru#133#hxur#2wrq#F R 5h



D IP #R I#P HWKD QH#SUR MHF WV



4 #Jhgxfh#p hwdqgh#hp lwrqv#q#k#h#gdlu|#
surgxfwrq#k#urxjk#v|whp dwlf#euhhg#bj

5 #R ewdlq#hwlp dwhv#rip hwdqgh iruihhg#bj
dgg p dgdjhp hqw#q#lwdwlyhv

J HQ HWIF #/HOHF WIR Q #R U#P HWKD QH#SUR GX F WIR Q



Q hhg#p dq | #hfrugv

Sulydwh khugv



< Y hbj J hqhwfv



DDUKXV XQIYHUVI\

WHF KQ IF DOH/F HQ FHV

IF DU #ECHG #357
56#D \#357

WUIQ H#P IF KHOOH #EOK P VHQ
VHQ IR U#DGYVR U



P HWK D Q H#VQ II IHU

Surv=

Uho w y h q # k h d s # c f r w # i h f w y h

Q r w # a y d v y h

P d q | # h f r u g v



P HWK D Q H#VQ II IHU

Surv=

Uho wlyho #khd s#f r w#ih f wlyh

Q r w#y d vlyh

P dq |#h frugv

F r qv=

F r q f h q w d r q # r w # r o p h

R q d |# P V

V q d s v k r w

P h w |# g d w #

D i h f w h g # |# h q y l r q p h q w



F R OOHF WHG #P HWKD QH#JHF R UGV



6 : #Khugv



£47 ß33#Erz v

- ; ß33#KRO
- 6 ß33#MHU
- 5 ß33#JGF
- 4 ß33#Furwehg

GDWD #WUHD P

On-site Automated Milking System



On-site Sniffers System



On-site Automated Milking System



AMS database



AMS time series

On-site Sniffers System



Sniffers database



Sniffers time series



On-site Automated Milking System



On-site Sniffers System



AMS database

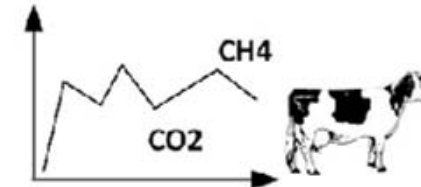


AMS time series

Sniffers database

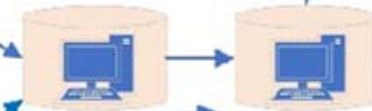


Sniffers time series

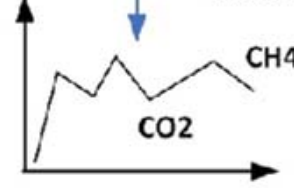


Individual animals records

Synchronization



Statistical Processing:
Baseline Estimation



Baseline records

Processing
Emissions &
Phenotypes

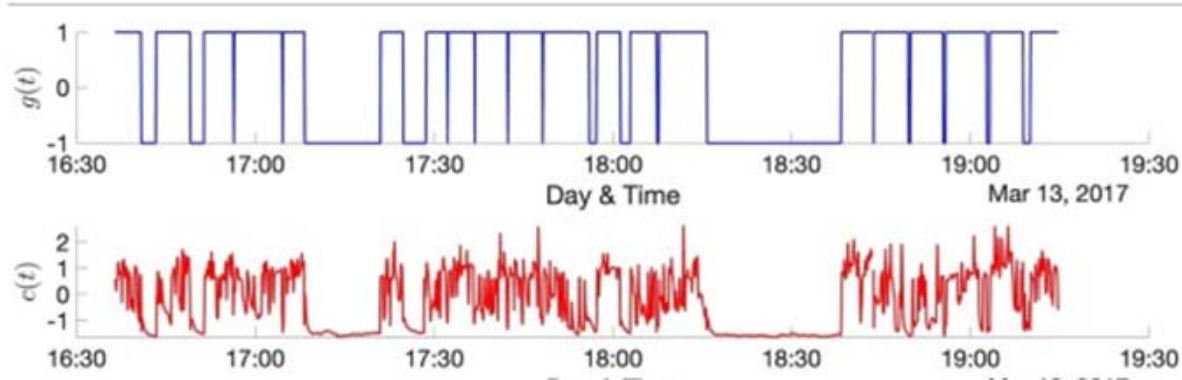


CH4



Emissions
database

WIP H#V\ Q F KUR Q I] DWIR Q #D QG #T X D OIW\ #T R Q WUR O



Computers and Electronics in Agriculture

Volume 201, October 2022, 107299



Data synchronization for gas emission measurements from dairy cattle: A matched filter approach

Viktor Milkevych , Trine Michelle Villumsen , Peter Lavendahl , Goutam Sahana 



DDUKXV XQ IYHUVI\

WHF KQ IF DOH/F HQ FHV

IF DU #E CHG # 357
56 # D \ # 357

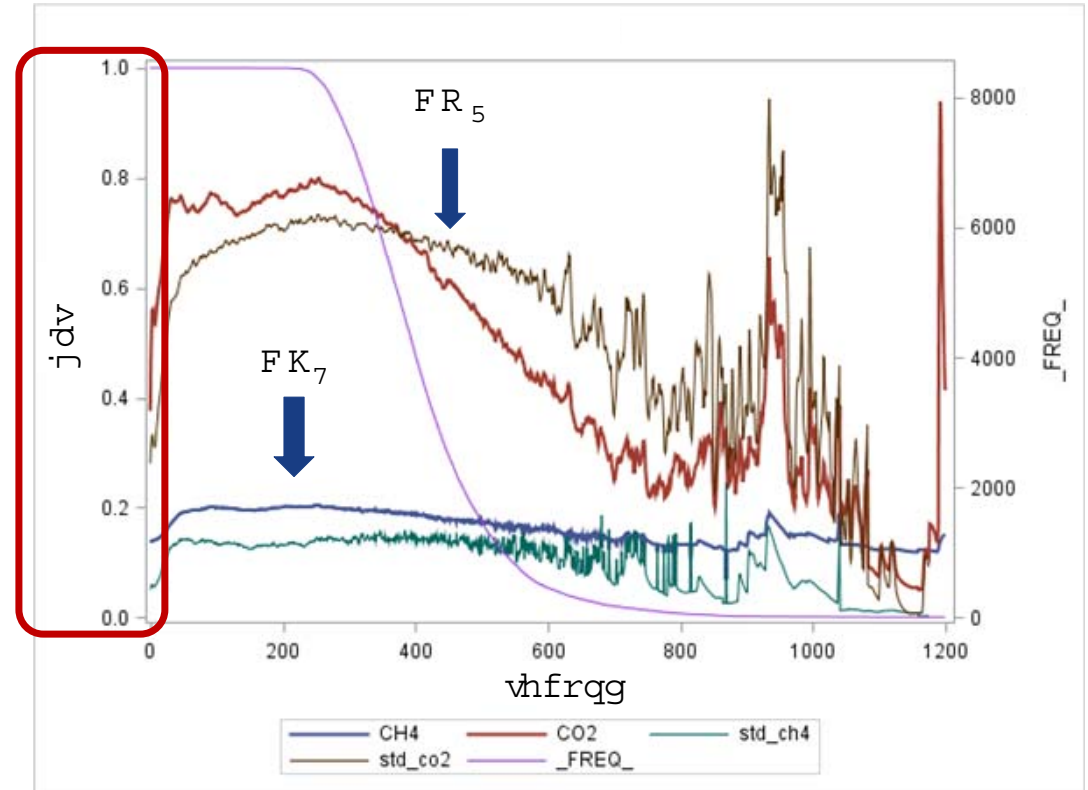
WUIQ H#P IF KHOOH # IOX P VHQ
VHQ IR U #D GYVR U



SUX Q IQ J #R I#ID UO\ #D Q G #D WH#JHF R UGV

F K7#lqg#F R 5#urp #;333# lnbjv

J dv#frqfhqwdwrqv#lqg#wg#

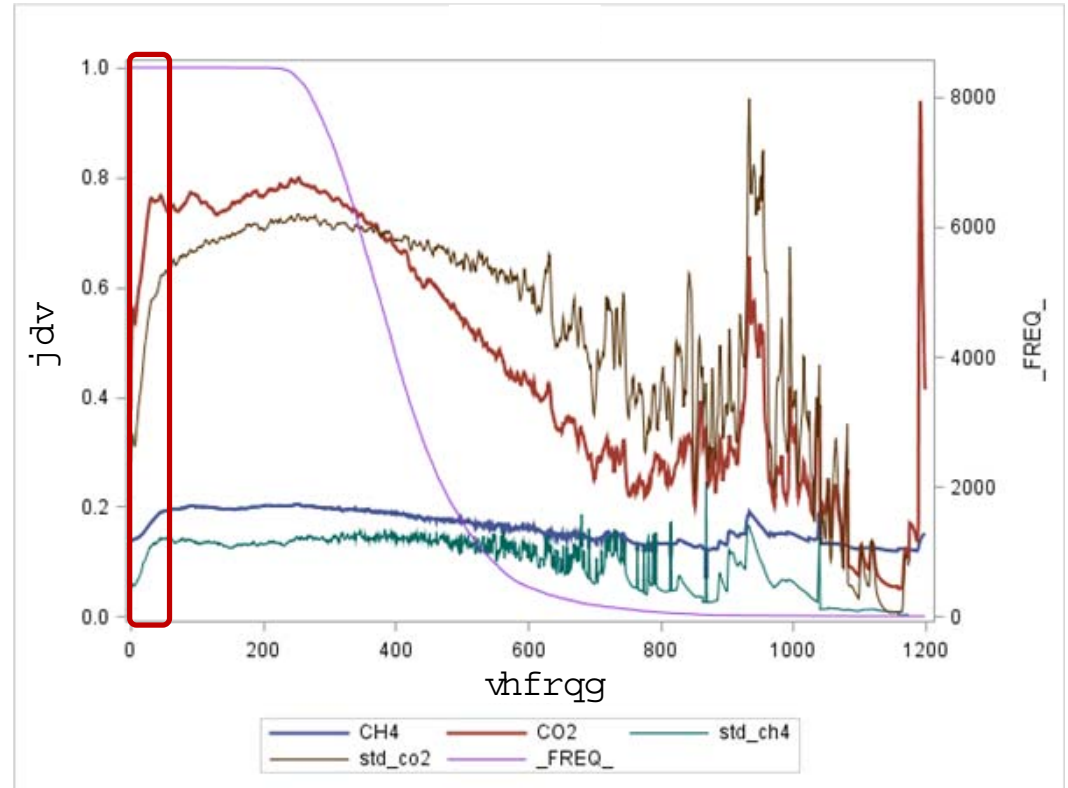


SUX Q IQ J #R I#ID UO\ #D Q G #D WH#JHF R UGV

F K 7 #dgg# R 5 #urp # ; 333 # b b j v

J d v #f r q f h q w d w r q v #d g g #w g #

H q w d q f h



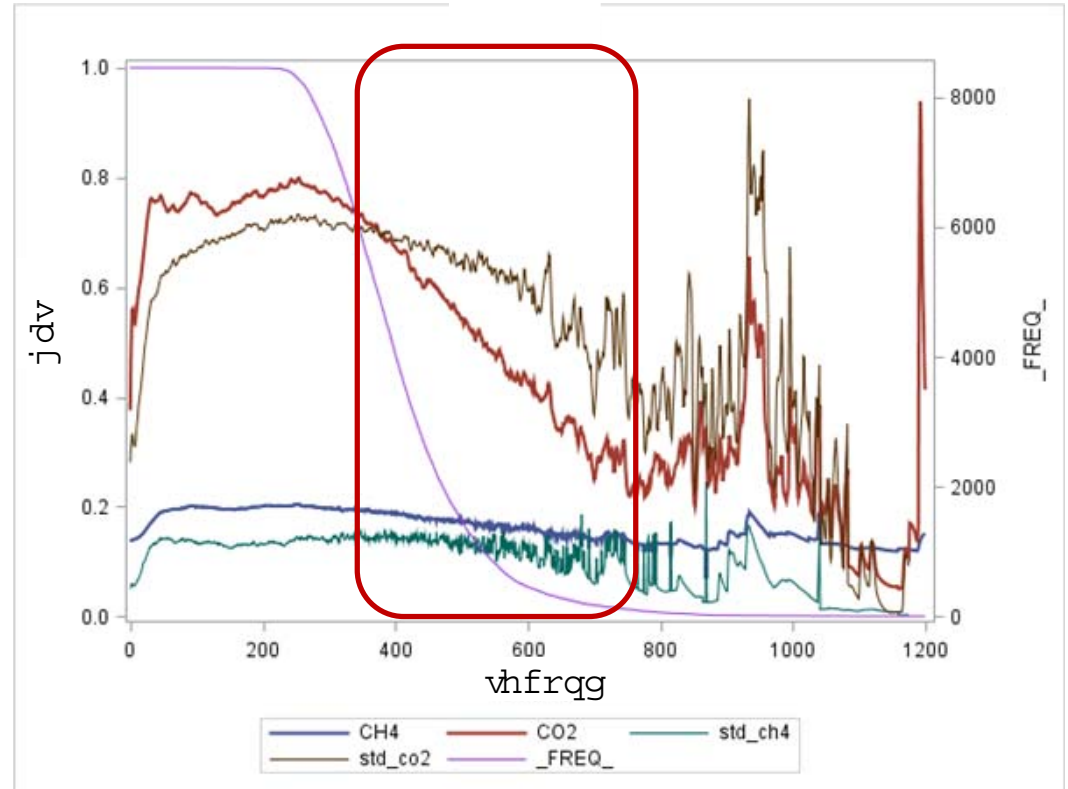
SUX Q IQ J #R I#ID UO\ #D Q G #D WH#JHF R UGV

F K 7 #dgg# R 5 #urp # ; 333 # b b j v

J d v #f r q f h q w d w r q v #d g g #w g #

H q w d q f h

P r u h # k h d g # d i w j # d w u r q



SUX Q IQ J #R I#ID UO\ #D Q G #D WH#JHF R UGV

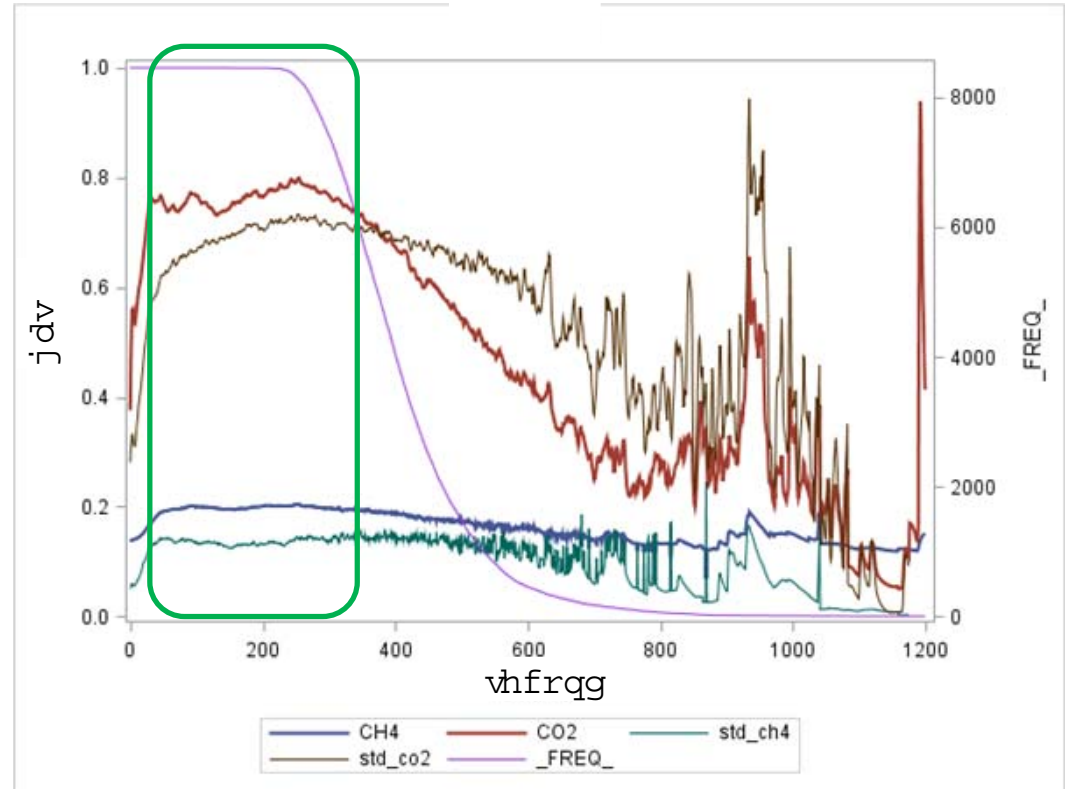
F K 7 #d qg #R 5 #urp # ; 333 # b l q j v

J d v #f r q f h q w d w r q v #d q g #w g #

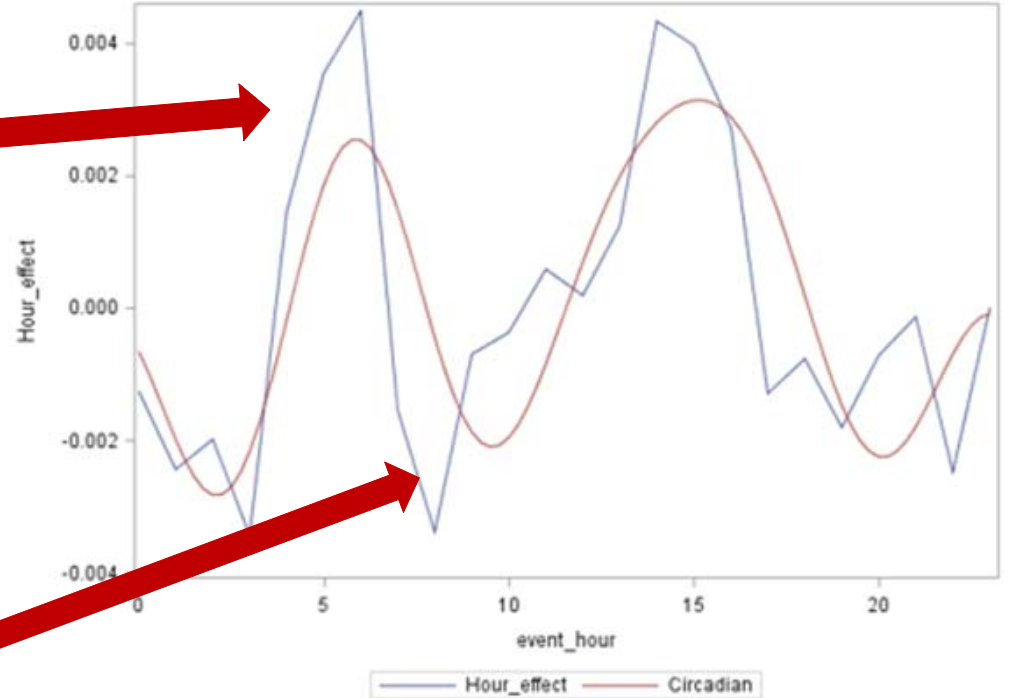
H q w d q f h

P r u h #k h d g #d i w q j #d w u r #q

E h w #q w h y d q #i r u #d q d q v #



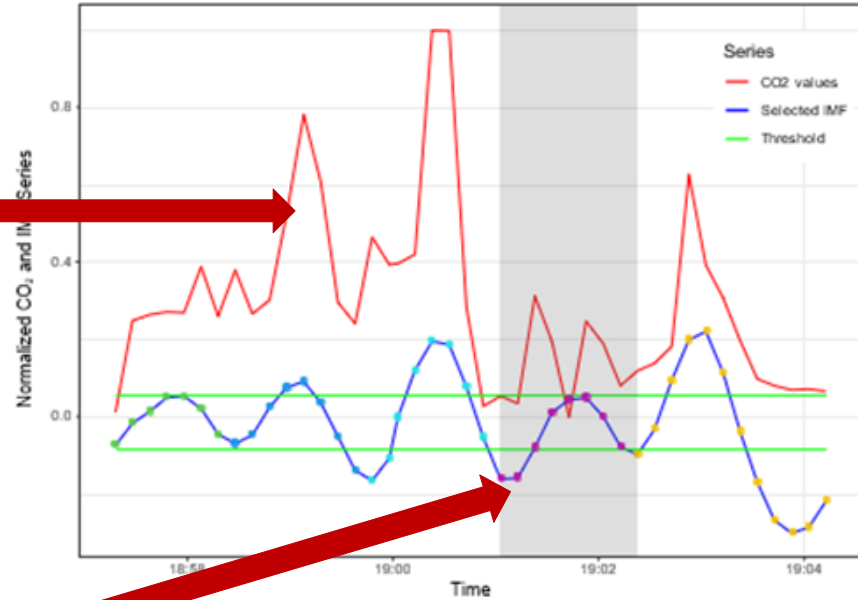
ED VHOIQ H#T D V#F R Q F HQ WUD WIR Q V



Hp sw| #shurgv#g#D P V

G kugd#ydudwrgv

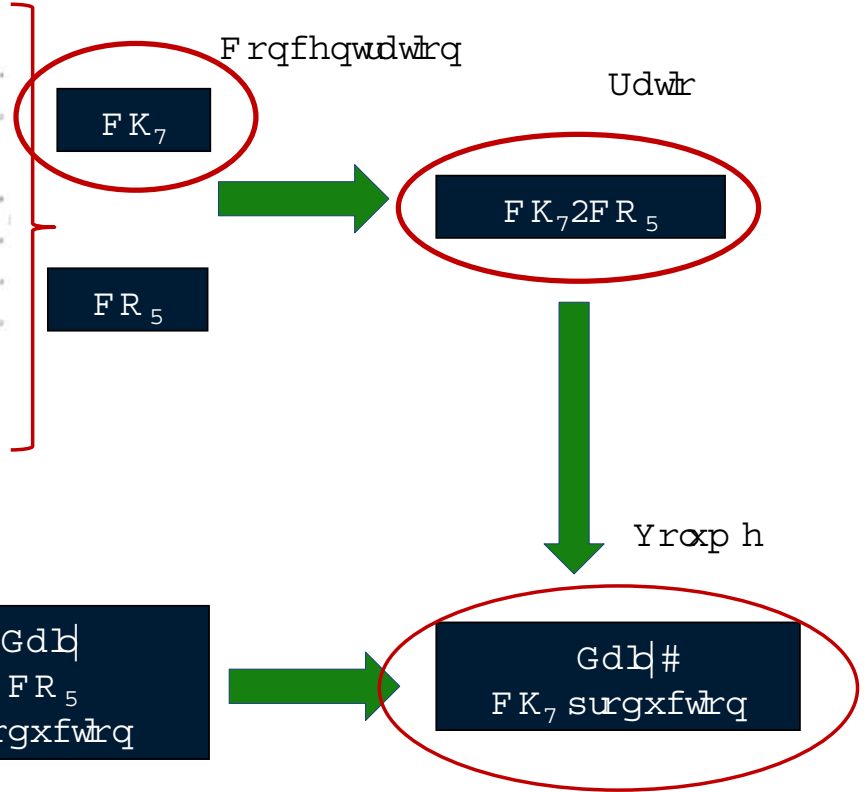
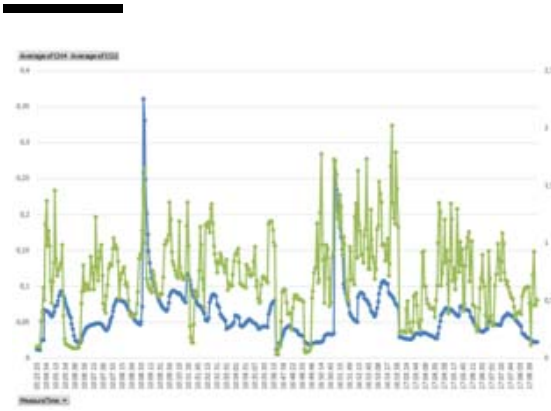
KHDG OLIWIQ J



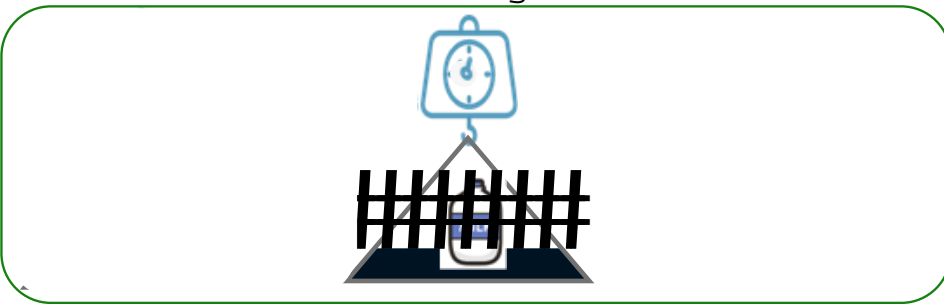
A novel approach for anomaly detection in dairy cow gas emission records

Neeraj Dhanraj Bokde ^{a, b}, Viktor Milkevych ^a, Rikke Krogh Nielsen ^a,
Trine Michelle Villumsen ^a, Goutam Sahana ^a

IUR P # F R Q F HQ WUD WIR Q # WR # \$ KHQ R W \ SH



žHgxfhg#R qIdup # rghč



Predicting CO₂ production of lactating dairy cows from animal, dietary, and production traits using an international dataset
 M.H. Kjeldsen • M. Johansen • M.R. Weisbjerg • ... C. Reynolds • S.R.O. Williams • P. Lund • Show all authors
 Open Access • Published: May 14, 2024 • DOI: <https://doi.org/10.3168/jds.2023-24414>



K H U I W D E I Q W I H V # R U # P H W K D Q H # W U D I W V

H { d p s o n v # p h w k d q h # s k h q r w | s h v

W u d l w	K h u l d e l w
F r q f h q w d w r q # s s p	3 5 3
S u r g x f w r q # 2 g d	3 5 4
I q w h q v l w # j # K 7 2 n j # p l m	3 4 ;
\ h o g # j # K 7 2 n j # G P L	3 5 5

P d q } d q l o S h f k # h w l d # 3 5 5



V d p h # k h u l d e l w h v # r q # o l u j h o v f d o n # g d w d B

WDNH#KR P H=

D#Eduergq#hp lvlrq#d { lv#wurqj#p rwydwruiru#hgxfbj#Edp dwh#j dv#
hp lvlrq#q#gdlu#Erz v

J hqhwl#hdfwrq iruz hup hwdqh#surgxfwrq#2nj#surgxfw# d |#h#rqr#i#
wkh# lvjdwlrq#wodwj hv

Vqlihw duh#hodyh#Erwchilfhqwirus#dujhcvfdd# hdvxup hqw#r i#j dv#
hp lvlrqv#q#gdlu#dup v

Dq#dxwrp dwng#s lshdqh lvqhhghg#w#p rqlru#Edndq#lqg#hqvxh#kjk0
txd#w#gdw irup hwdqh#skhrw|shv





DDUKXVXQYHUVW\

HT X ISP HQ W#HUUUR UVY#H [D P SOHV



ᐅᐅᐅ



DDUKXV XQ IYHUVI\

WHF KQ IF DOH/F HQ FHV

IF DU #ECHG #357
56#D \#357

WUIQ H#P IF KHOOH#EOK P VHQ
VHQ IR U#DGYIVR U

