

# Title here

Y.O. Urname



Cover page: Amsterdam canals: describe cover photograph...

ISBN

Printed by:

VRIJE UNIVERSITEIT

# Title here

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad Doctor aan  
de Vrije Universiteit Amsterdam,  
op gezag van de rector magnificus  
prof.dr. ???insert name????,  
in het openbaar te verdedigen  
ten overstaan van de promotiecommissie  
van de Faculteit der Aard- en Levenswetenschappen  
op ...dag ... 201? om .. uur  
in .....(de aula/het auditorium)..... van de universiteit,  
De Boelelaan 1105

door

**Yankee Oscar Urname**

geboren te ???city???, ???country???

promotor: Prof.dr Prince of Darkness

copromotoren: dr. Newton

dr. A. Einstein

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	First section . . . . .	1
1.2	Objectives and organisation of the thesis . . . . .	1
1.3	Data availability . . . . .	1
<b>2</b>	<b>First paper...</b>	<b>3</b>
2.1	Introduction . . . . .	3
2.2	Site description . . . . .	3
2.3	Material and methods . . . . .	3
2.4	Results . . . . .	3
2.5	Discussion . . . . .	3
2.6	Conclusions . . . . .	3
<b>3</b>	<b>Second paper...</b>	<b>5</b>
3.1	Introduction . . . . .	5
3.2	Site description . . . . .	5
3.3	Material and methods . . . . .	5
3.4	Results . . . . .	5
3.5	Discussion . . . . .	5
3.6	Conclusions . . . . .	5
<b>4</b>	<b>Third paper...</b>	<b>7</b>
4.1	Introduction . . . . .	7
4.2	Site description . . . . .	7
4.3	Material and methods . . . . .	7
4.4	Results . . . . .	7
4.5	Discussion . . . . .	7
4.6	Conclusions . . . . .	7
<b>5</b>	<b>Fourth paper...</b>	<b>9</b>
5.1	Introduction . . . . .	9
5.2	Site description . . . . .	9
5.3	Material and methods . . . . .	9
5.4	Results . . . . .	9
5.5	Discussion . . . . .	9
5.6	Conclusions . . . . .	9
<b>6</b>	<b>Synthesis</b>	<b>11</b>

<b>7</b>	<b>Conclusions and recommendations</b>	<b>13</b>
<b>8</b>	<b>Summaries</b>	<b>15</b>
8.1	English summary . . . . .	15
8.2	Nederlandse samenvatting . . . . .	16
<b>9</b>	<b>Acknowledgements</b>	<b>17</b>
<b>List of symbols and abbreviations</b>		<b>19</b>
<b>My appendix 2</b>		<b>21</b>

# **Chapter 1**

## **Introduction**

### **1.1 First section**

### **1.2 Objectives and organisation of the thesis**

The main objectives of this thesis are:

### **1.3 Data availability**



## **Chapter 2**

# **This is my first paper<sup>1</sup>**

### **2.1 Introduction**

Intro

### **2.2 Site description**

text here

### **2.3 Material and methods**

text here

### **2.4 Results**

### **2.5 Discussion**

### **2.6 Conclusions**

---

<sup>1</sup>The contents of this chapter have been published as ...



# **Chapter 3**

## **This is my second paper<sup>1</sup>**

### **3.1 Introduction**

Intro

### **3.2 Site description**

text here

### **3.3 Material and methods**

text here

### **3.4 Results**

### **3.5 Discussion**

### **3.6 Conclusions**

---

<sup>1</sup>The contents of this chapter have been published as ...



## **Chapter 4**

# **This is my third paper<sup>1</sup>**

### **4.1 Introduction**

Intro

### **4.2 Site description**

text here

### **4.3 Material and methods**

text here

### **4.4 Results**

### **4.5 Discussion**

### **4.6 Conclusions**

---

<sup>1</sup>The contents of this chapter have been published as ...



# **Chapter 5**

## **This is my fourth paper<sup>1</sup>**

### **5.1 Introduction**

Intro

### **5.2 Site description**

text here

### **5.3 Material and methods**

text here

### **5.4 Results**

### **5.5 Discussion**

### **5.6 Conclusions**

---

<sup>1</sup>The contents of this chapter have been published as ...



# **Chapter 6**

# **Synthesis**

Synthesis comes here



## **Chapter 7**

# **Conclusions and recommendations**

State your conclusions here...



# **Chapter 8**

## **Summaries**

### **8.1 English summary**

English summary here

## **8.2 Nederlandse samenvatting**

Nederlandse samenvatting text hier

## **Chapter 9**

# **Acknowledgements**

This research was done under  
Finally, thank family, friends, etc...



# List of symbols and abbreviations

The following list gives a short description of the symbols used throughout this thesis, together with their units.

<b>Symbol</b>	<b>Description and unit</b>
$A$	Available energy for partitioning over $H$ and $\lambda E$ and $G$ [W m <sup>-2</sup> ]
$\alpha$	Albedo for short-wave radiation
$\alpha$	Mean apparent ecosystem quantum yield [ $\mu\text{mol CO}_2 \mu\text{mol}^{-1}$ absorbed photons]
$\alpha$	Terrain slope [%]
$\lambda$	Latent heat of vapourization of water [J kg <sup>-1</sup> ]
$\lambda E$	Latent heat flux [W m <sup>-2</sup> ]
$\theta$	Volumetric soil moisture content [m <sup>3</sup> – <sup>3</sup> m]
$D$	Vapour pressure deficit [hPa]
$e$	Water vapour pressure in air [hPa]
$e_s$	Saturation vapour pressure of air [hPa]
$G$	Flux density of heat into the soil [W m <sup>-2</sup> ]
$g$	Gravitational acceleration [m s <sup>-2</sup> ]
$H$	Sensible heat flux [W m <sup>-2</sup> ]
$h$	Mean vegetation height a.g.l. [m]
$h_m$	Maximum measurement height a.g.l. [m]
$k$	Von Karman's constant, set to 0.4
$L$	Obukhov length [m]
$\text{LAI}$	Leaf area index [m <sup>2</sup> leaf surface m <sup>-2</sup> ground surface]
$L_i$	Downward longwave radiation flux [W m <sup>-2</sup> ]
$L_o$	Upward longwave radiation flux [W m <sup>-2</sup> ]
$L_n$	Net longwave radiation flux [W m <sup>-2</sup> ]
$\text{NEE}$	Carbondioxide net ecosystem exchange [ $\mu\text{mol m}^{-2} \text{s}^{-1}$ ]
$\text{NEP}$	Net ecosystem production [ $\mu\text{mol m}^{-2} \text{s}^{-1}$ ]
$n$	Sample size
$P$	Rainfall total [mm]
$P_a$	Atmospheric pressure [N m <sup>-2</sup> ]
$R$	Molar gas constant [N m mol <sup>-1</sup> K <sup>-1</sup> ]
$R_{\text{eco}}$	Ecosystem CO <sub>2</sub> respiration rate [ $\mu\text{mol m}^{-2} \text{s}^{-1}$ ]
$\text{RH}$	Relative humidity [%]
$R_n$	Net radiation [W m <sup>-2</sup> ]

$R_{\text{soil}}$	Soil CO <sub>2</sub> respiration rate [ $\mu\text{mol m}^{-2} \text{s}^{-1}$ ]
$r$	Correlation coefficient
$r^2$	Coefficient of determination
$S_i$	Incoming short-wave radiation [ $\text{W m}^{-2}$ ]
$S_o$	Reflected shortwave radiation [ $\text{W m}^{-2}$ ]
$r_a$	Aerodynamic resistance [ $\text{s m}^{-1}$ ]
$\rho$	Density of air [ $\text{kg m}^{-3}$ ]
$S$	CO <sub>2</sub> storage in canopy air space [ $\mu\text{mol m}^{-2} \text{s}^{-1}$ ]
$T_a$	Air temperature [K]
$t$	Time [second, hour, day, year]
$U$	Mean wind speed [ $\text{m s}^{-1}$ ]
$u(z)$	Wind speed at height $z$ above the soil surface [ $\text{m s}^{-1}$ ]
$u_*$	Friction velocity [ $\text{m s}^{-1}$ ]
WUE	Water use efficiency [-]
$z$	Height above the ground surface [m]

# **My appendix 2**

This is the second appendix

# **Index**

Objectives, 1

Symbols, 19