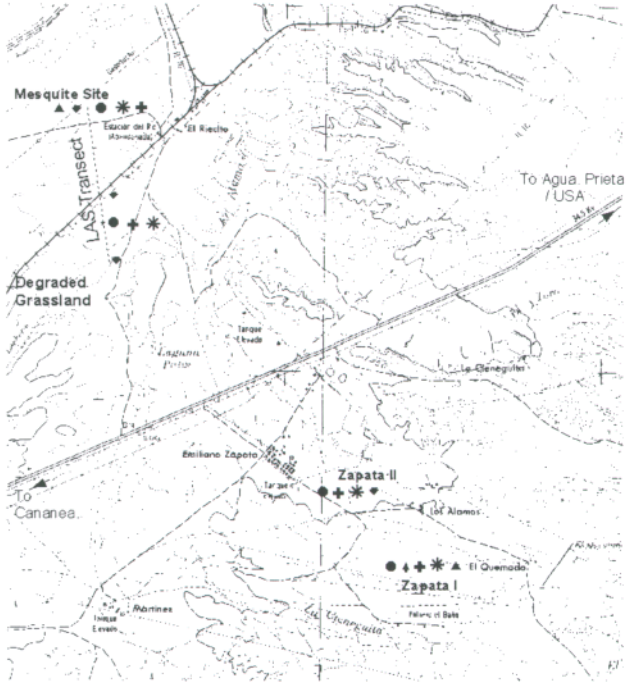
Site Location.



▲ Flume.
✳ Met. and Flux Stations.
♦ Remote Sensing.
◆ Scintillometers.(LAS)
● Soil Moisture.
✚ Vegetation Monitoring.

Figure 1

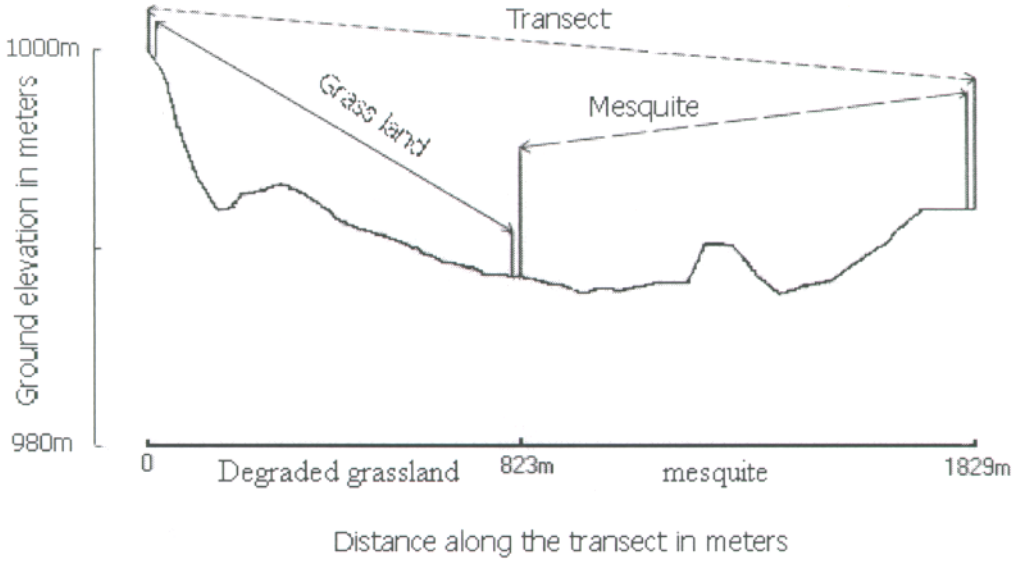

Transect
1000m
Grass land
Mesquite
Ground elevation in meters
980m
0
Degraded grassland
823m
mesquite
1829m
Distance along the transect in meters

Figure 2

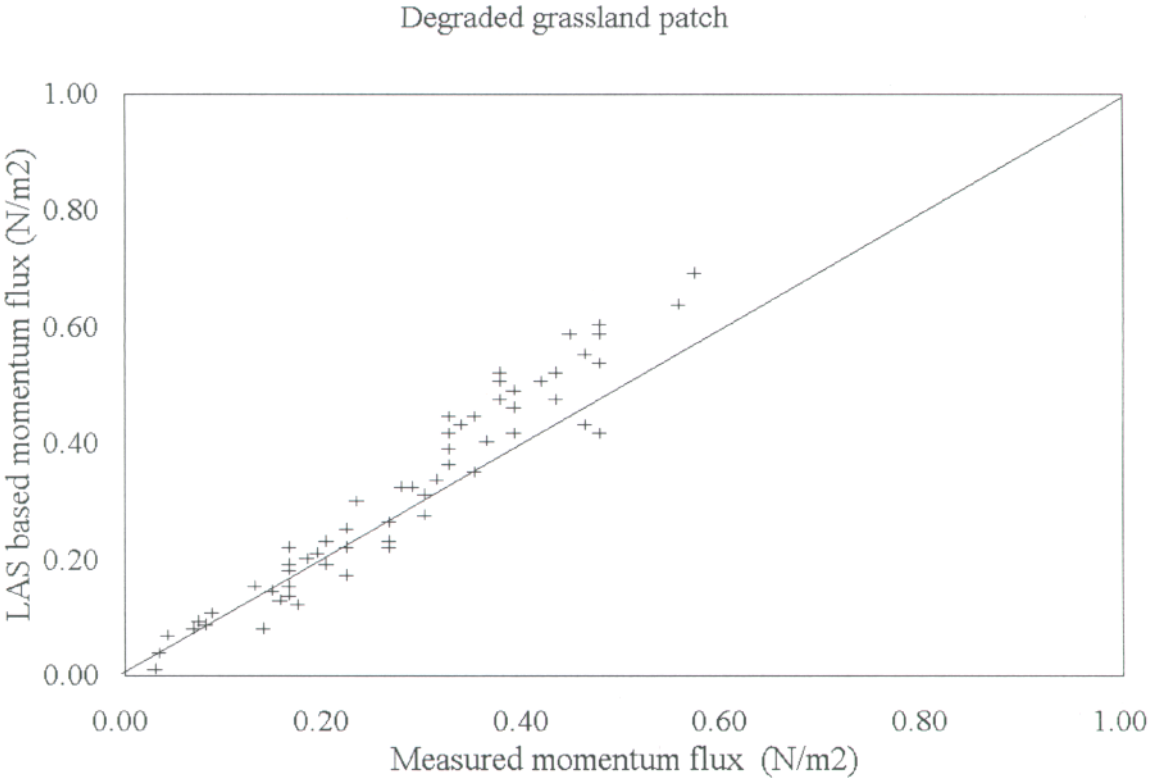

Degraded grassland patch
LAS based momentum flux (N/m2)
1.00
0.80
0.60
0.40
0.20
0.00
0.00
0.20
0.40
0.60
0.80
1.00
Measured momentum flux (N/m2)

Figure 3

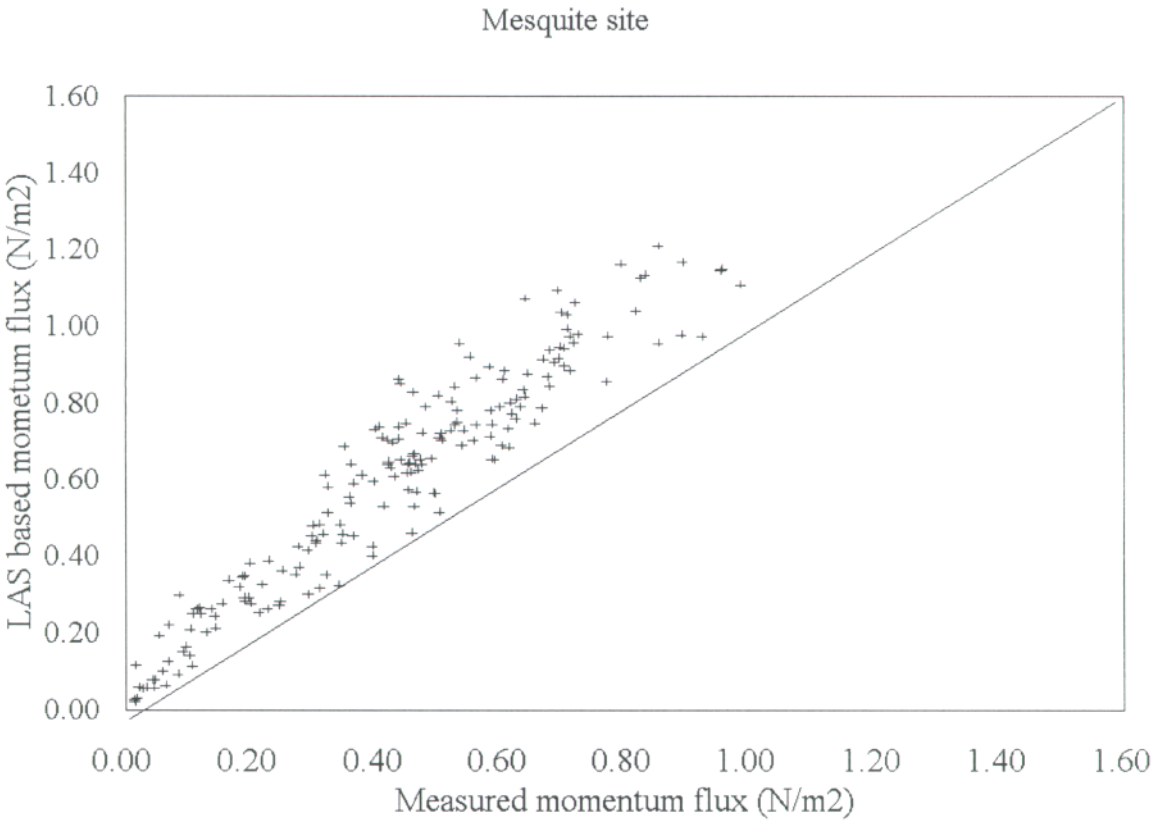

Mesquite site
LAS based mometum flux (N/m2)
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
Measured momentum flux (N/m2)

Figure 4

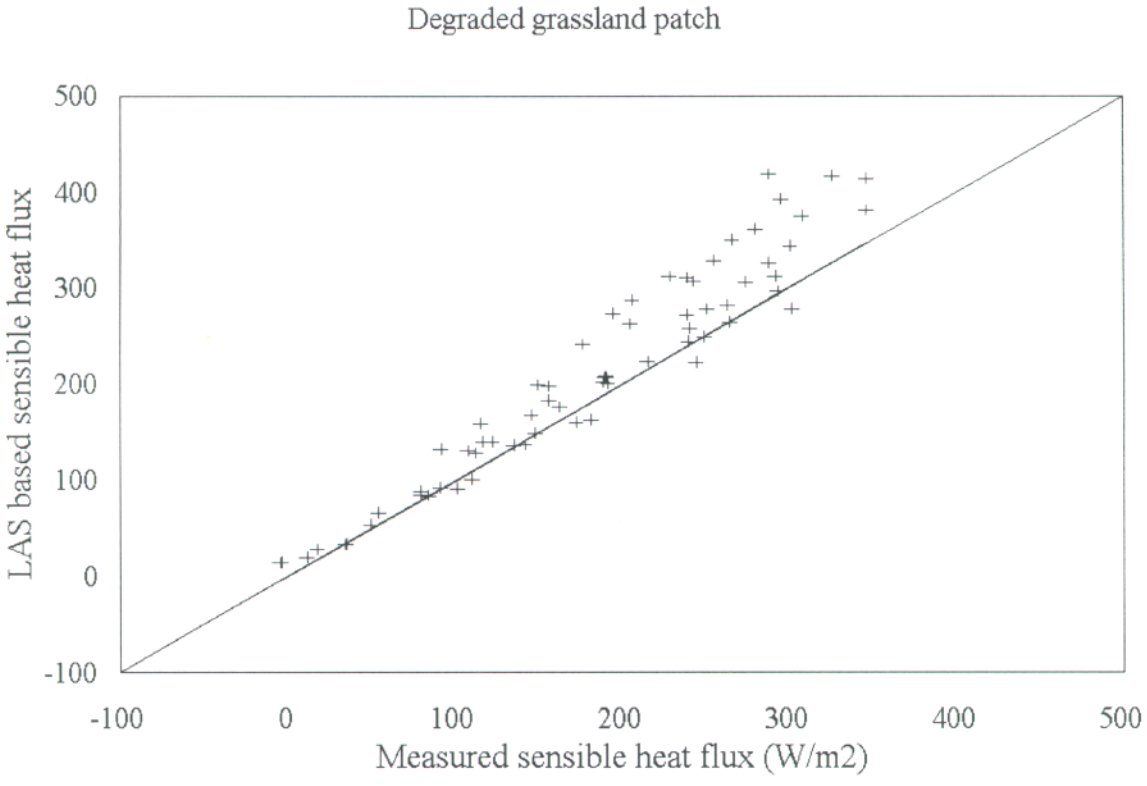

Degraded grassland patch
LAS based sensible heat flux
500
400
300
200
100
0
-100
-100
0
100
200
300
400
500
Measured sensible heat flux (W/m2)

Figure 5

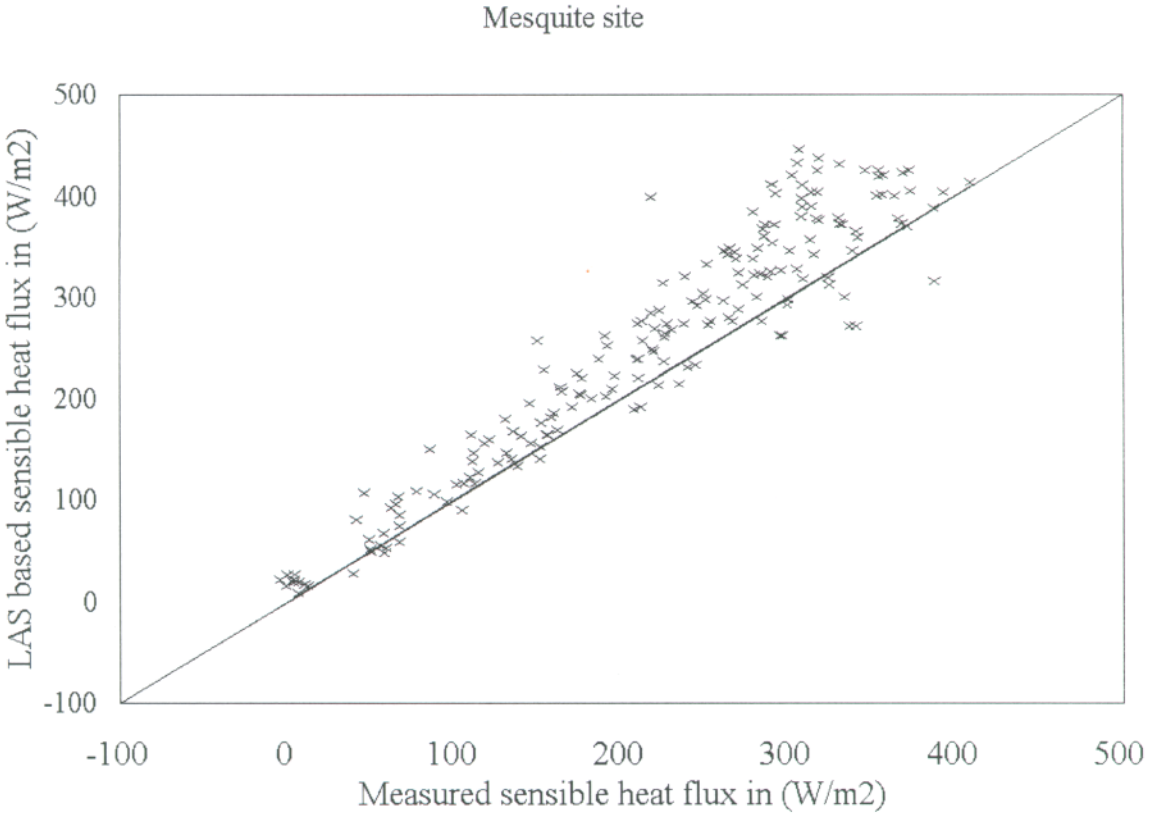

Mesquite site
LAS based sensible heat flux in (W/m2)
500
400
300
200
100
0
-100
-100
0
100
200
300
400
500
Measured sensible heat flux in (W/m2)

Figure 6

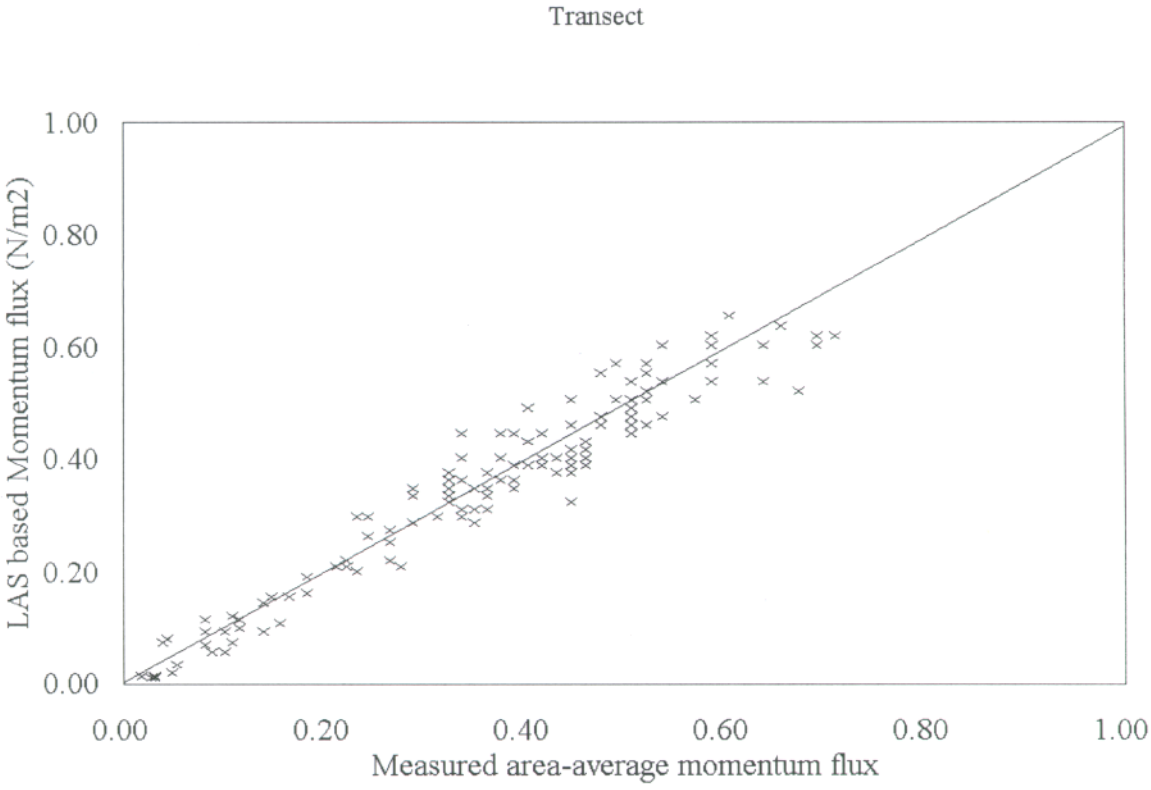

Transect
1.00
0.80
0.60
0.40
0.20
0.00
LAS based Momentum flux (N/m2)
0.00
0.20
0.40
0.60
0.80
1.00
Measured area-average momentum flux

Figure 7

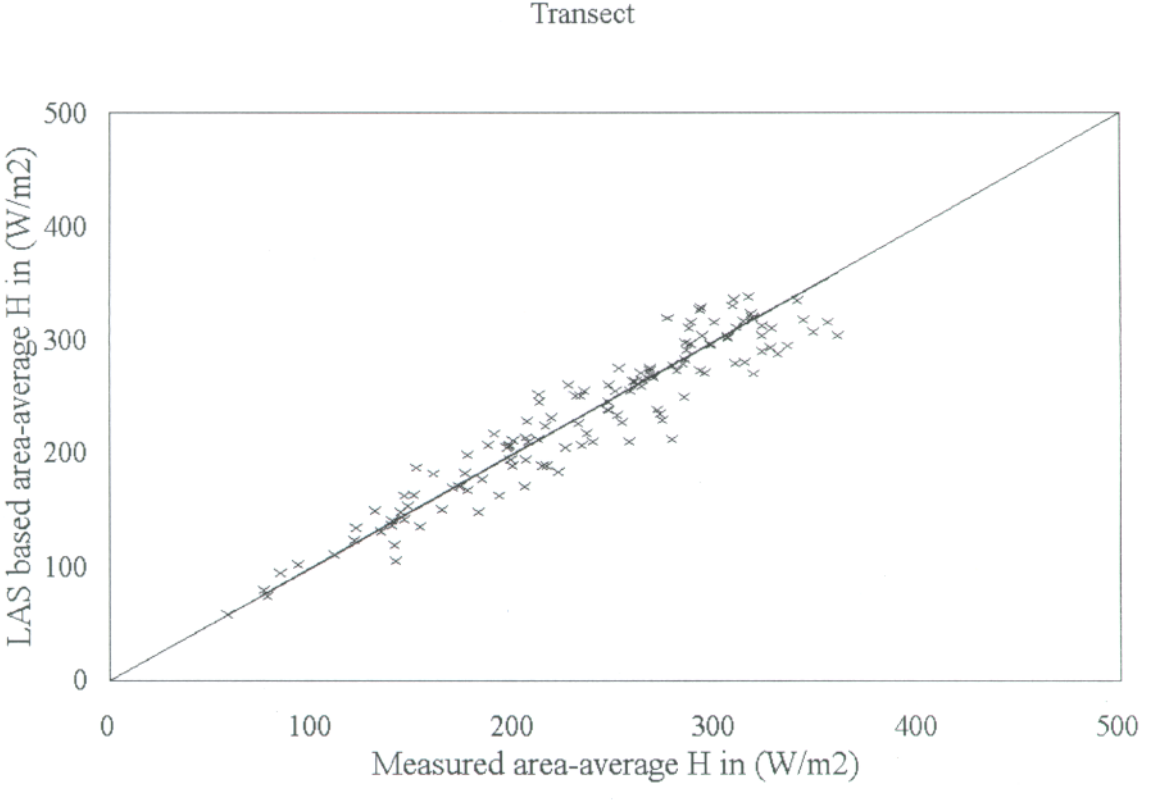

Transect
LAS based area-average H in (W/m2)
Measured area-average H in (W/m2)
0
100
200
300
400
500

Figure 8

Table 1a: Effective scintillometer height, the corresponding time average of sensible heat flux and the result of the linear regression between measured and simulated heat flux values associated with each method over the degraded grass patch

Method	Effective height (m)	Average H in Wm^{-2}	Slope	STD Error	R^2
Method 1	6.14	210.97	1.15	29.58	0.93
Method 2	3.44	169.11	0.93	34.53	0.86
Method 3	6.02	208.99	1.14	29.78	0.93

Table 1b: Effective scintillometer height, the corresponding time average of sensible heat flux and the result of the linear regression between measured and simulated heat flux values associated with each method over the mesquite patch.

Method	Effective height (m)	Average H in Wm^{-2}	Slope	STD Error	R^2
Method 1	10.73	251.97	1.15	37.76	0.90
Method 2	9.51	233.40	1.15	40.88	0.87
Method 3	10.50	241.71	1.10	39.15	0.89

Table 1c: Effective scintillometer height, the corresponding time average of sensible heat flux and the result of the linear regression between measured and simulated heat flux values associated with each method over the entire transect.

Method	Effective height (m)	Average H in Wm^{-2}	Slope	STD Error	R^2
Method 1	12.46	234.04	0.98	21.77	0.90
Method 2	6.10	175.36	0.74	30.93	0.75
Method 3	11.38	221.91	0.93	22.73	0.88