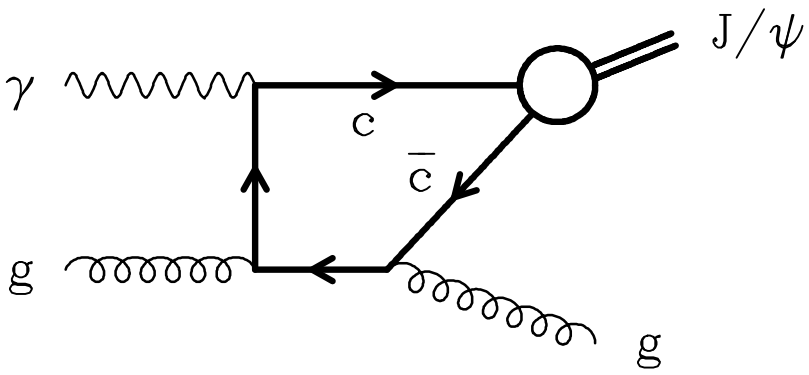
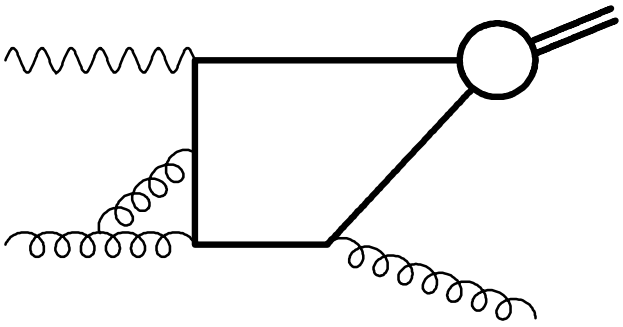
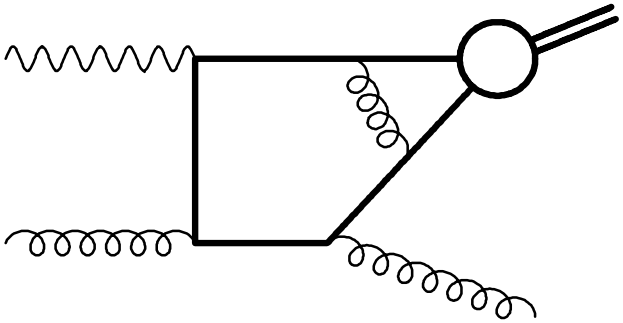


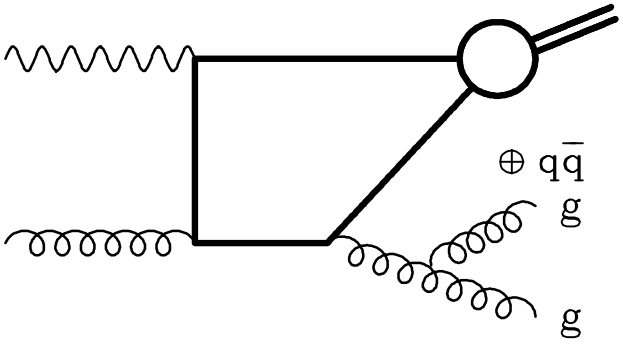
(a)



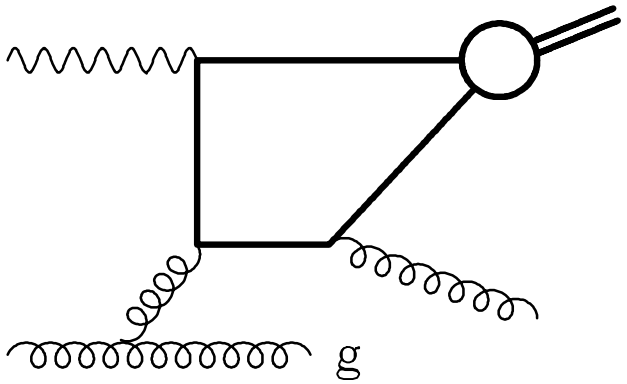
(b)



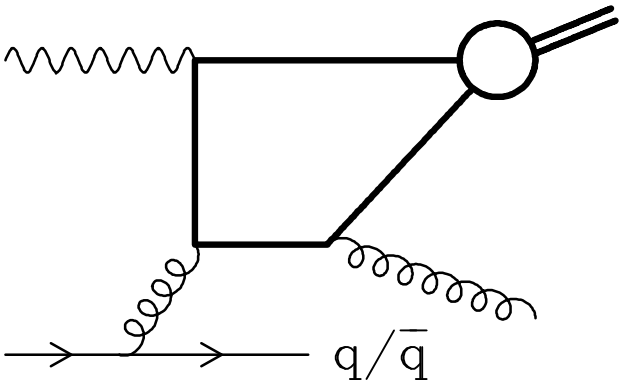
(c)



(d)

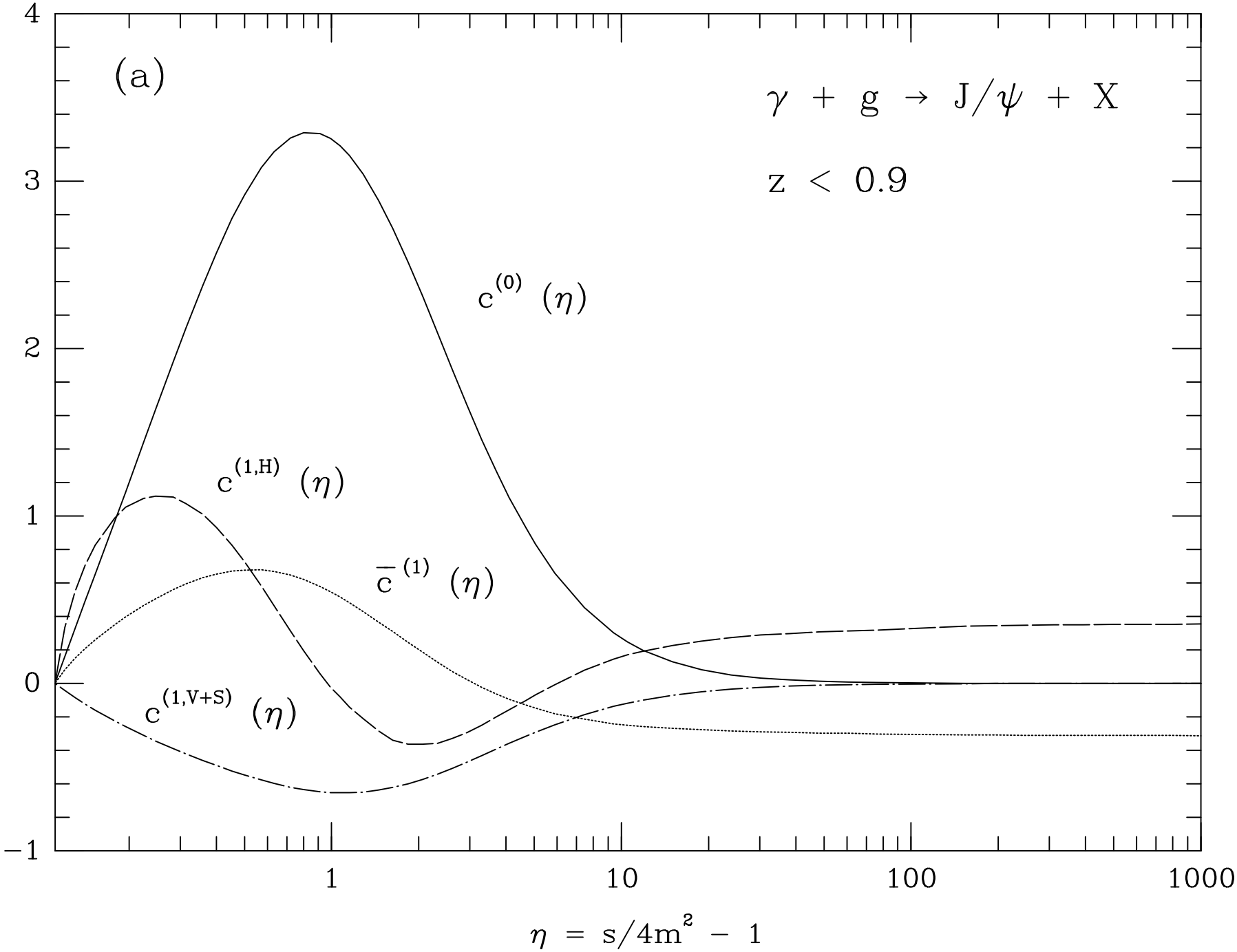


(e_1)



(e_2)

Fig. 1


(a)
$\gamma + g \to J/\psi + X$
$z < 0.9$
$c^{(0)}(\eta)$
$c^{(1,H)}(\eta)$
$\bar{c}^{(1)}(\eta)$
$c^{(1,V+S)}(\eta)$
4
3
2
1
0
−1
1
10
100
1000
$\eta = s/4m^2 - 1$

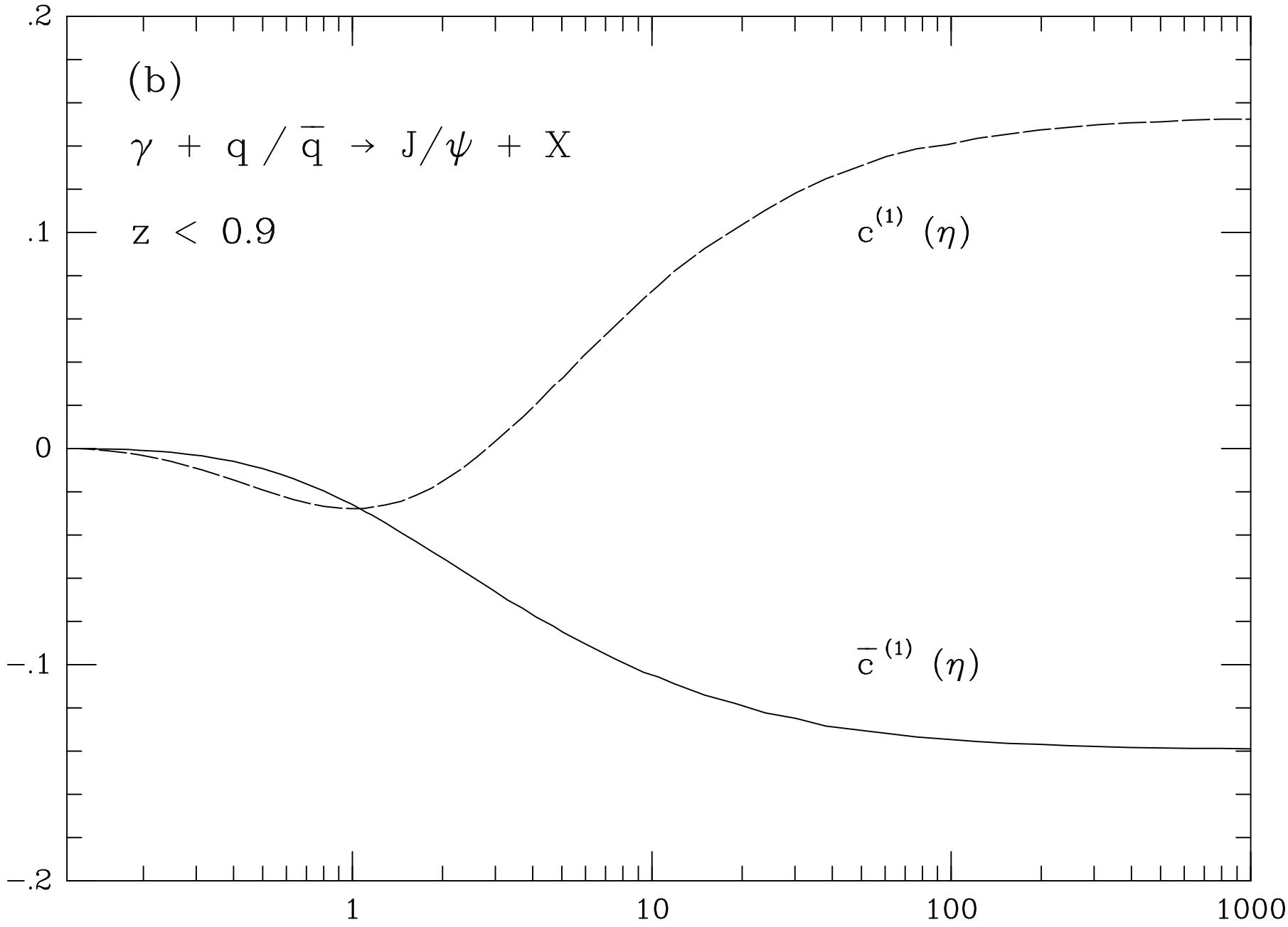
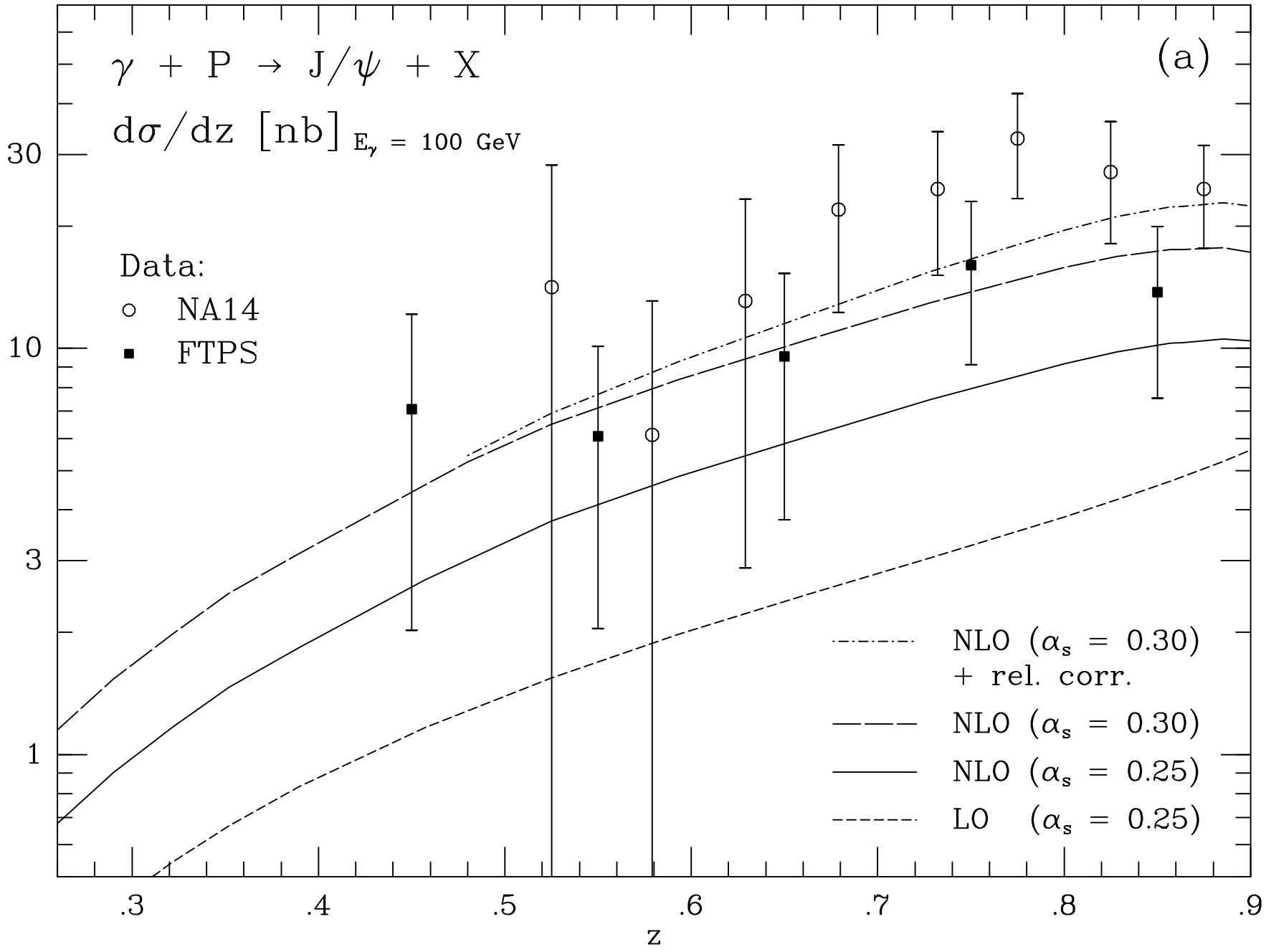

(b)
$\gamma + q / \bar{q} \rightarrow J/\psi + X$
$z < 0.9$
$c^{(1)}(\eta)$
$\bar{c}^{(1)}(\eta)$
.2
.1
0
−.1
−.2
1
10
100
1000
$\eta = s/4m^2 - 1$

Fig. 2


γ + P → J/ψ + X
(a)
dσ/dz [nb] E_γ = 100 GeV
Data:
NA14
FTPS
NLO (α_s = 0.30) + rel. corr.
NLO (α_s = 0.30)
NLO (α_s = 0.25)
LO (α_s = 0.25)
30
10
3
1
.3
.4
.5
.6
.7
.8
.9
z

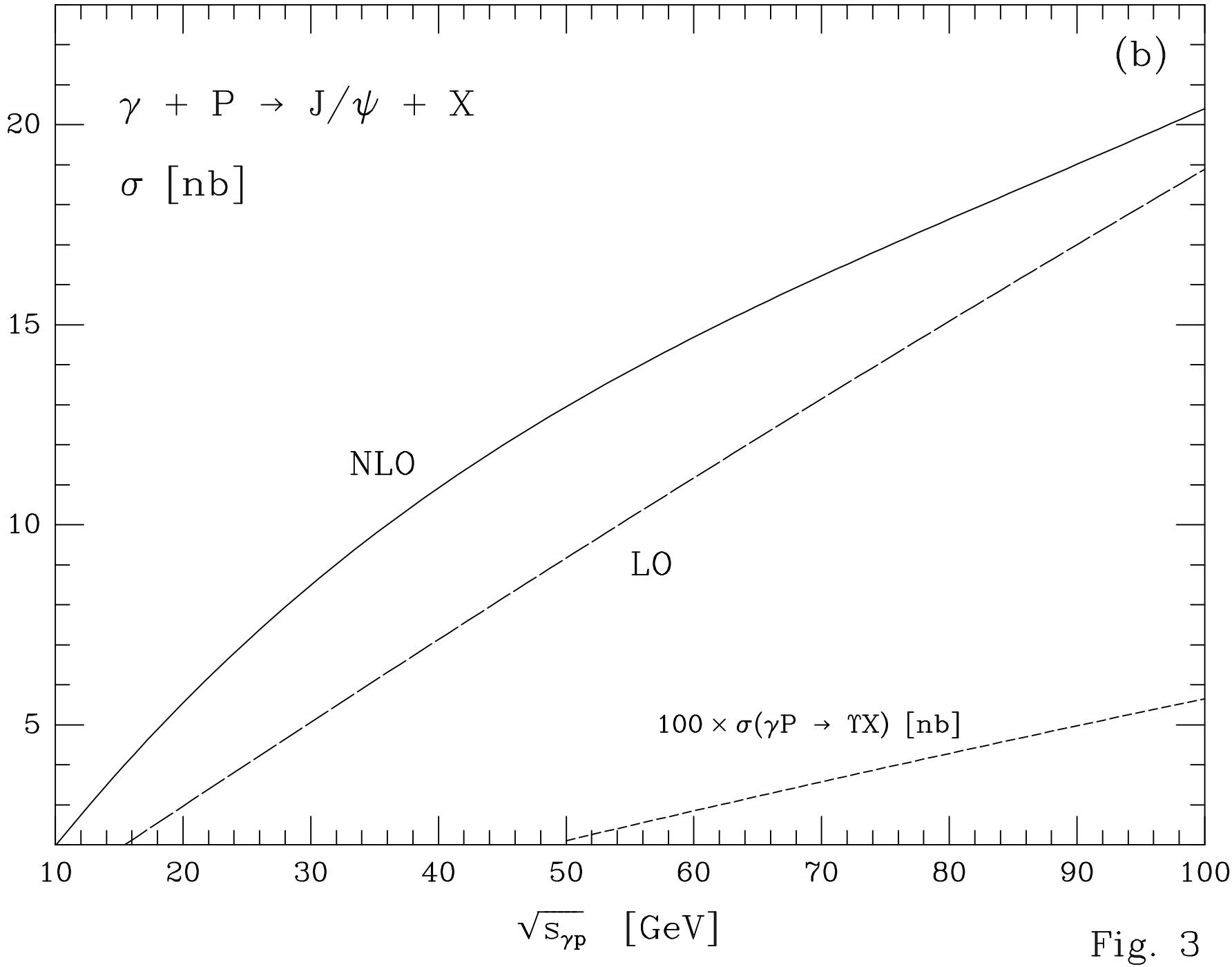

(b)
$\gamma + P \rightarrow J/\psi + X$
σ [nb]
NLO
LO
$100 \times \sigma(\gamma P \rightarrow \Upsilon X)$ [nb]
20
15
10
5
10
20
30
40
50
60
70
80
90
100
$\sqrt{s_{\gamma p}}$ [GeV]

Fig. 3

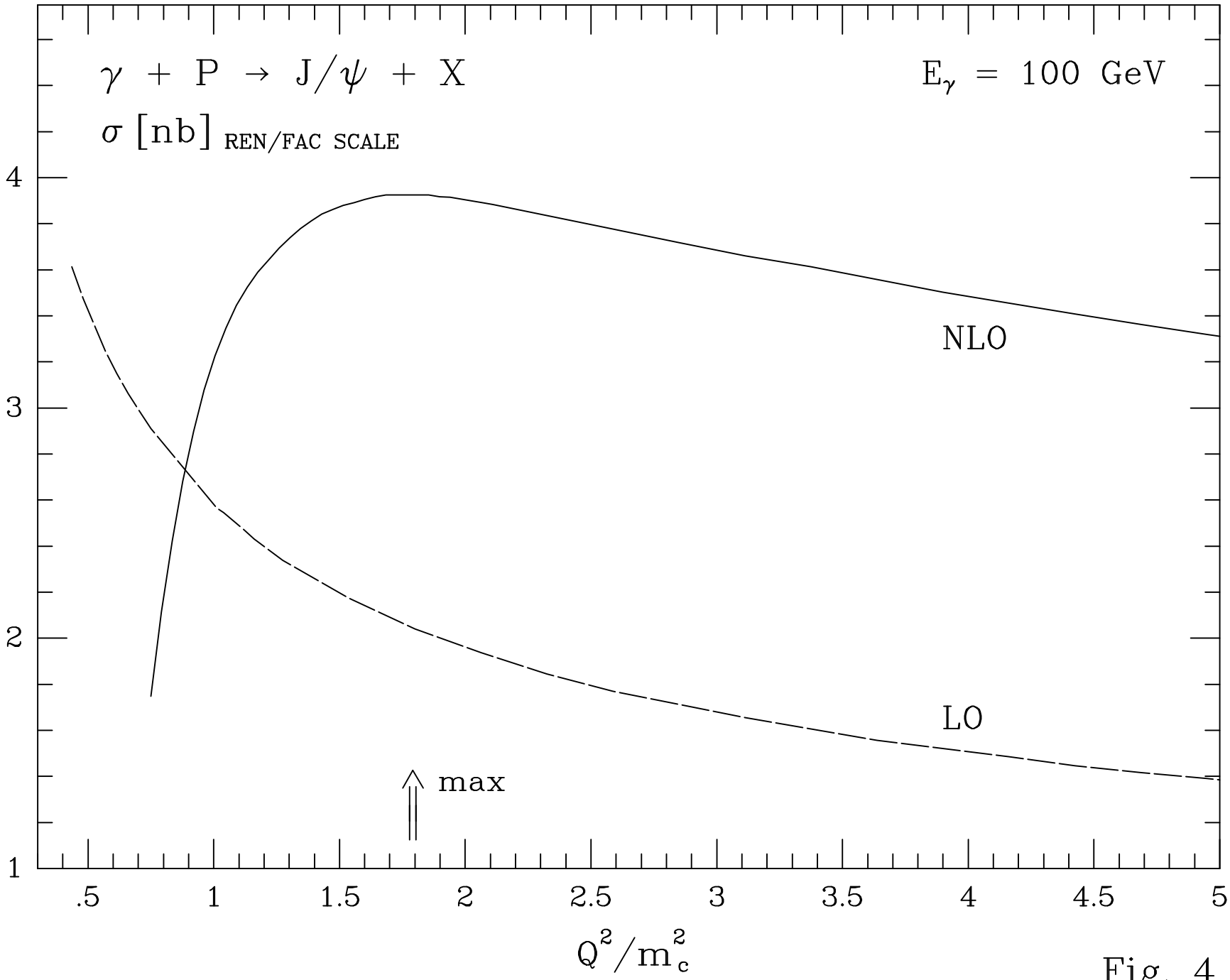

$\gamma + P \rightarrow J/\psi + X$
$E_\gamma = 100$ GeV
σ [nb] REN/FAC SCALE
NLO
LO
max
4
3
2
1
.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Q^2/m_c^2

Fig. 4