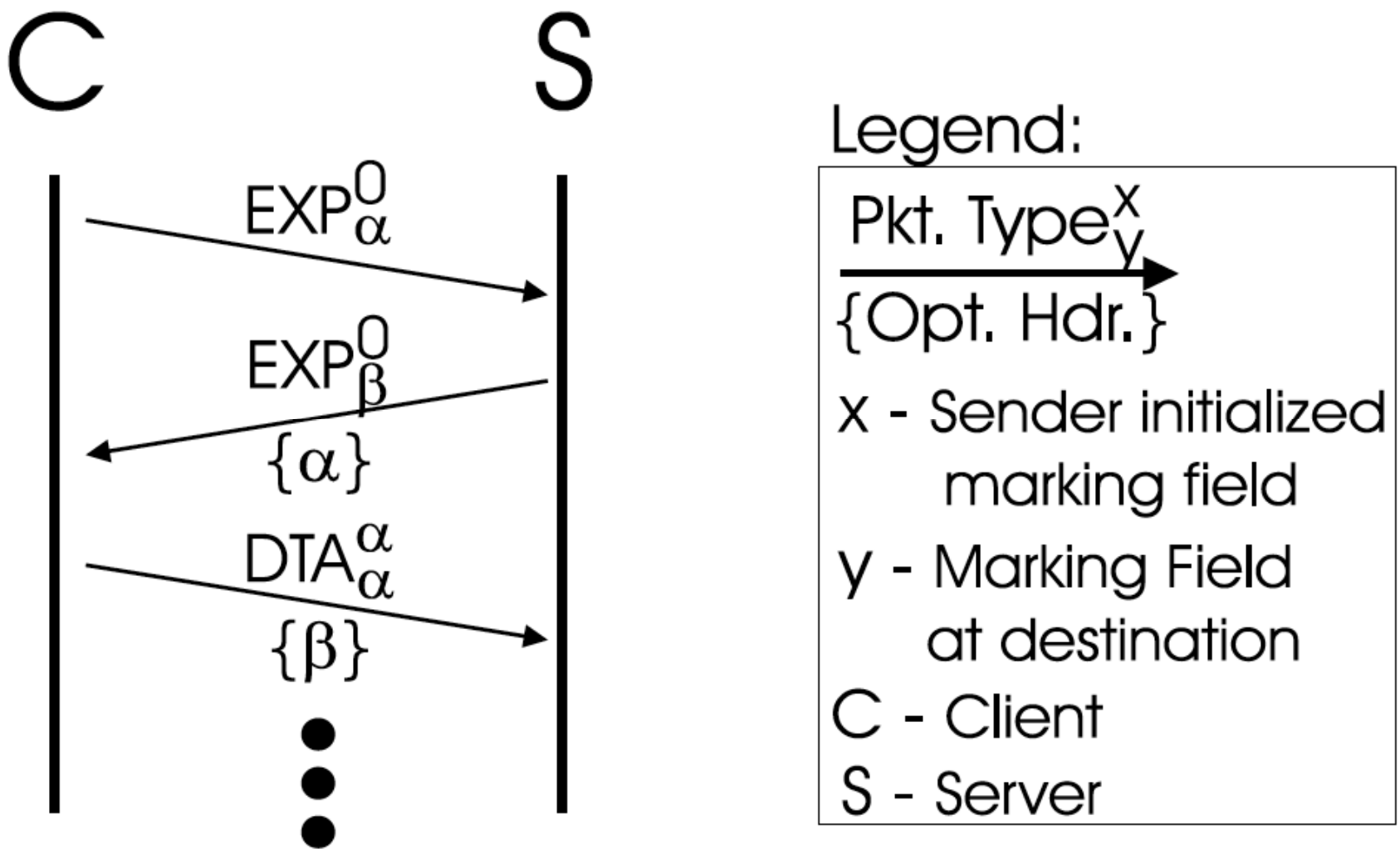

C
S
EXP$^{0}_{\alpha}$
EXP$^{0}_{\beta}$
{α}
DTA$^{\alpha}_{\alpha}$
{β}
Legend:
Pkt. Type$^{x}_{y}$
{Opt. Hdr.}
x - Sender initialized marking field
y - Marking Field at destination
C - Client
S - Server

	$x=2$	$x=3$	$x=4$	$x=5$
$z=1$	0.7500	0.8750	0.9375	0.9688
$z=2$	0.4375	0.5781	0.6836	0.7627
$z=3$	0.2344	0.3301	0.4138	0.4871
$z=4$	0.1211	0.1760	0.2275	0.2758

Table 1. Evaluation of $P(x,z)$ (the probability to pass one router with a forged probability), for common values of x and z.

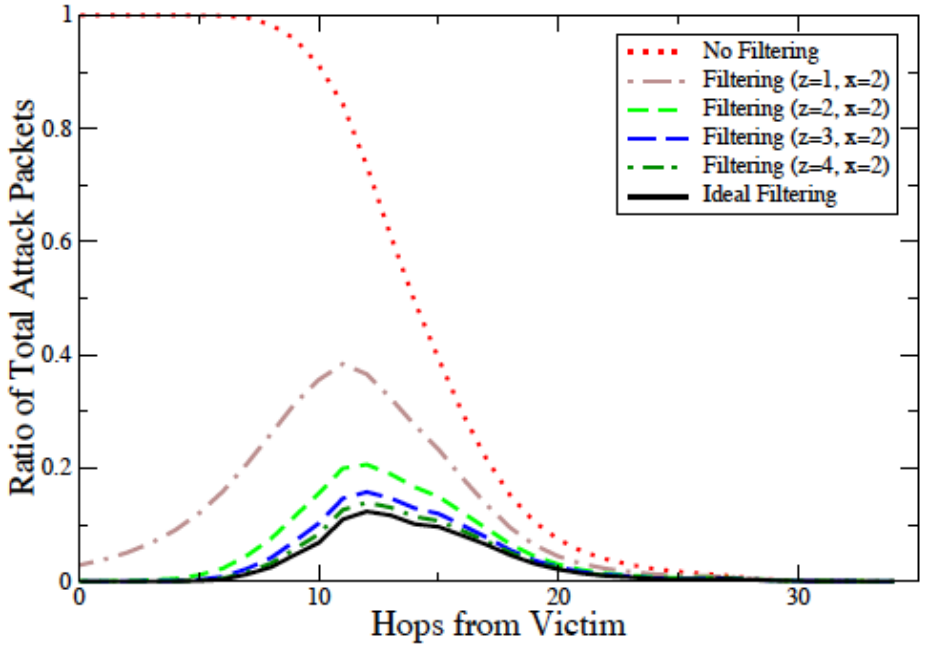
The probability that the client can connect after k tries is:

$$\begin{aligned} &P(\text{ connect after k tries}) \\ &\quad = 1 - (1 - P(\text{connect after 1 try}))^k \\ &\quad = 1 - (1 - (1 - \epsilon_i)^i)^k \end{aligned}$$

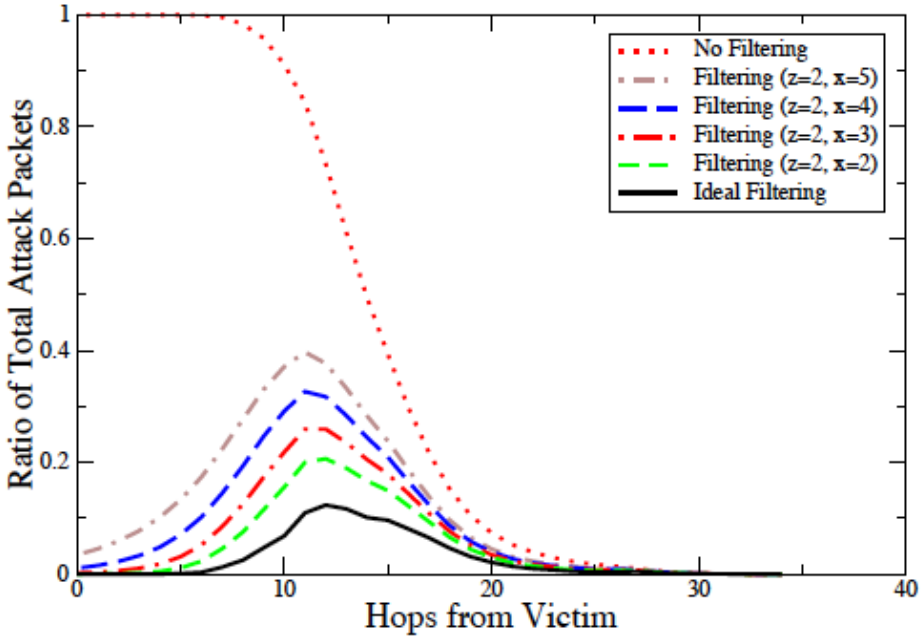
the required number of connection attempts is:

$$k = \frac{\log(1 - P(connect))}{\log(1 - (1 - \epsilon_i)^i)}$$

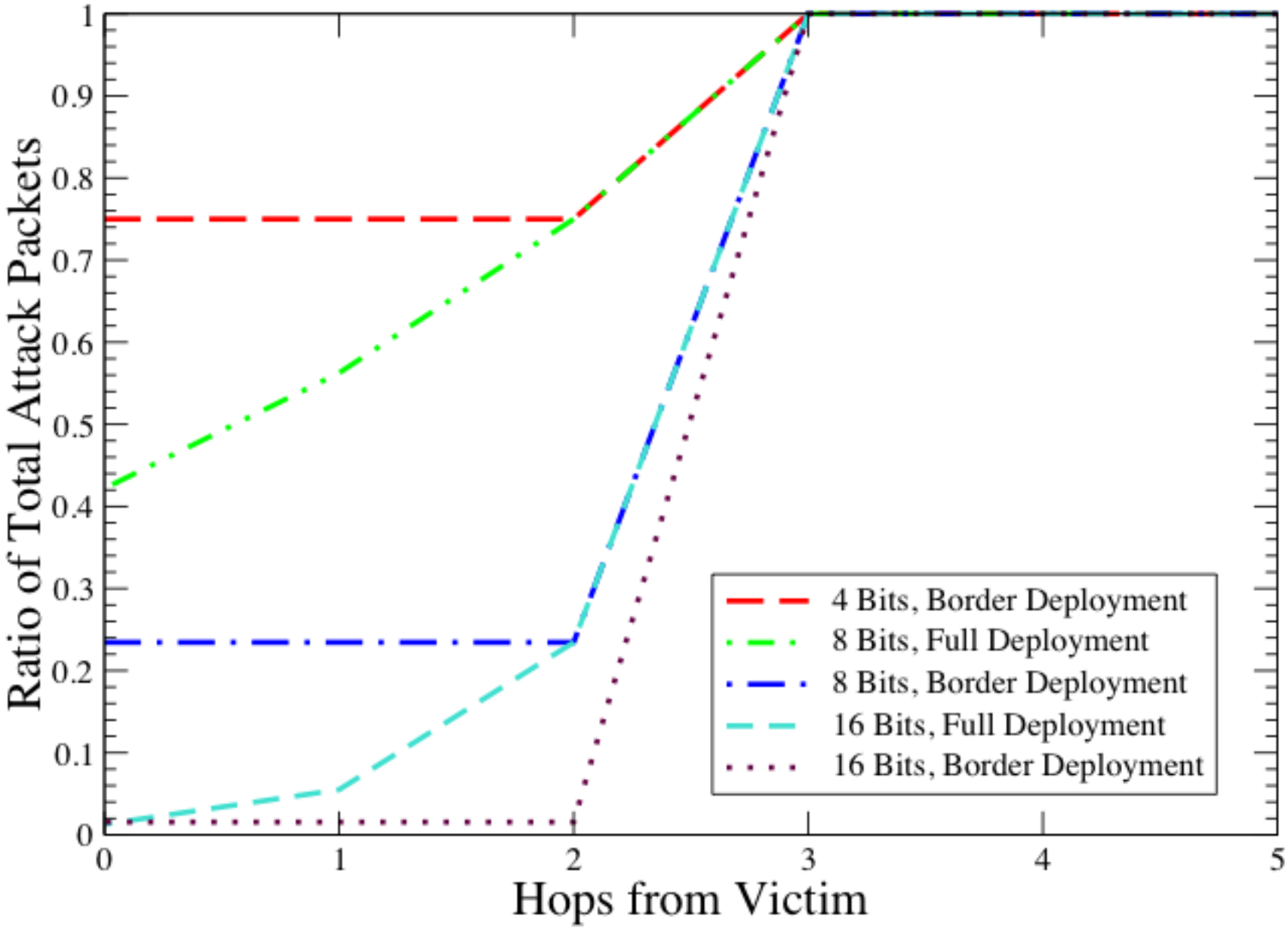
A nice feature of this formula is that the expected number of connection attempts depends logarithmically on the connection probability, which indicates that even for large ϵ_i, a determined client can get a connection after a moderate waiting time.



(a) Performance for various values of z, ($x = 2$).



(b) Performance for various values of x, ($z = 3$).


Ratio of Total Attack Packets
Hops from Victim
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
1
2
3
4
5
4 Bits, Border Deployment
8 Bits, Full Deployment
8 Bits, Border Deployment
16 Bits, Full Deployment
16 Bits, Border Deployment