K rzf n

b r

Ins r r

rkl r n

I h rsi h r , d ss i h di rli nd Arb i

1 In r d i n 12
2 r mbl 1
2.1 bri l r h 1
2.2 r i l D l n ri n l i n 1
R l d r 14
4 Al ri hm 1
4.1 r rr n ss 1
4.2 M ss m l xi 1
r 14141414141414141414

l d rk

In h s rs s r l l n r ls r in n d nd

$\Delta_{11-\textbf{Spanner}}$ [4] ns r s s nn r i h n r b nd **7** nd ns n n d d r m s **11**. h b in d r h is n l n r nd h l ri hm n ds n d n i s 4-h -n i hb rh d.

PuDel [ ] r d s s b r h hi h is l h s b r h

4 l ri h

1. r **k** ll siz d n s r nd **n**,

2. s l r h n n m n h sh r s d ,

. r r m xim l s n **s** m n s:

( ) i **|s| = 1**, h n l **nx** nd **ny** b h in id n d s n m l is nd n r l is , r s i l , r m h m n . I i h r **nx** r **ny** h s lr d b n s l d, s l h h r d ;

4 2 M m l xi

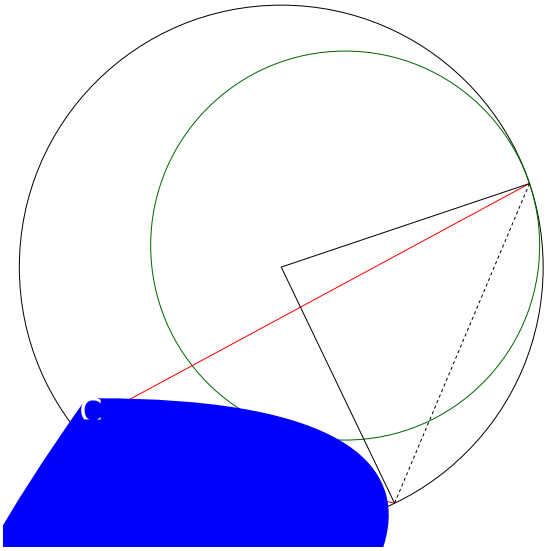
N$_{PDT}$(u) b h m ss m l xi **PDT** r in h n i hb rh d N d **u** □ **G**. Firs , **rPDT** n ds m s **n** m ss s r h **PDT**-n i hb rh d. N x , h x in n d s nds m s **k** m ss s i s n i hb rs s h h r h h ir nn i n. **k** ns rs m b nd h r r **k**□2. E r n his **k** n i hb rs n ds l l i s **PDT**-n i hb rh d nd h n , **k**□**N$_{PDT}$(u)**. h ll in i n . 4 1 d(h s) 2 . 1 d(r fl i ns) .4 d[(in)2

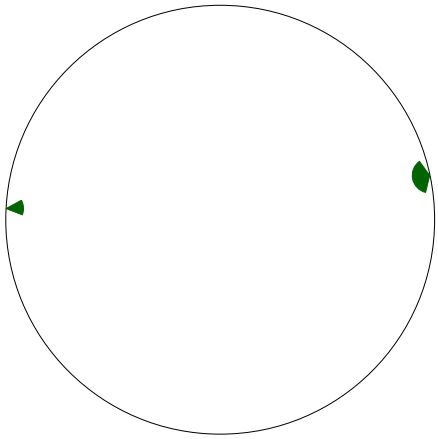
z1 . 1d[(N)1. 241 1 41 2 ()-1.4 41] /R 4[(. d[4 /R 1)

CA

. P F 21

2. **r iv**





r

[1] n R hr , H. K l sh , Ami N , nd I n m n i . M ss - E i n B nl ss r in Wi h r n d D li r in Wir l ss ns r, Ad H , nd A r N r s. *IEEE/ACM*