

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904145700
                                         sum(|constr|)      0.000000001480231254
                                         f(x_k) + sum(|constr|) 3.435021213384376700
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter   71
CPU time: 0.718750 sec. Elapsed time: 0.723000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.68423 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904145700
                                         sum(|constr|)      0.000000001480205821
                                         f(x_k) + sum(|constr|) 3.435021213384351400
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter   71
CPU time: 0.703125 sec. Elapsed time: 0.731000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67744 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904146600
                                         sum(|constr|)      0.000000001480164542
                                         f(x_k) + sum(|constr|) 3.435021213384311000
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter   71
CPU time: 0.750000 sec. Elapsed time: 0.769000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.68883 seconds
Starting numeric solver
```

```
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```

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480151004
              f(x_k) + sum(|constr|)            3.435021213384296800
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.750000 sec. Elapsed time: 0.741000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.70226 seconds
Starting numeric solver

```
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```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145200
              sum(|constr|)                    0.000000001480182221
              f(x_k) + sum(|constr|)            3.435021213384327400
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.750000 sec. Elapsed time: 0.765000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67056 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904146600
              sum(|constr|)                    0.000000001480146837
              f(x_k) + sum(|constr|)            3.435021213384293200
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 176
CPU time: 0.828125 sec. Elapsed time: 0.824000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.70449 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.438351283700354700
	sum(constr)	0.000000000074523206
	f(x_k) + sum(constr)	3.438351283774877800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 172

CPU time: 0.828125 sec. Elapsed time: 0.847000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67044 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.807309721107943200
	sum(constr)	0.000000002142850002
	f(x_k) + sum(constr)	4.807309723250793500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 126 GradEv 124 ConstrEv 124 ConJacEv 124 Iter 110 MinorIter 2946

CPU time: 5.609375 sec. Elapsed time: 5.608000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65953 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.464148486299014200
	sum(constr)	0.000000001771911149
	f(x_k) + sum(constr)	3.464148488070925200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 54 GradEv 52 ConstrEv 52 ConJacEv 52 Iter 37 MinorIter 4194

CPU time: 3.828125 sec. Elapsed time: 3.813000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66527 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480137696
	f(x_k) + sum(constr)	3.435021213384283500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 142

CPU time: 0.734375 sec. Elapsed time: 0.752000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68138 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480218135
	f(x_k) + sum(constr)	3.435021213384363800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.718750 sec. Elapsed time: 0.718000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65978 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480228049
	f(x_k) + sum(constr)	3.435021213384373600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.734375 sec. Elapsed time: 0.715000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65209 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146100
	sum(constr)	0.000000001480158900
	f(x_k) + sum(constr)	3.435021213384305200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 75

CPU time: 0.718750 sec. Elapsed time: 0.711000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64994 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480094383
	f(x_k) + sum(constr)	3.435021213384240800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 201

CPU time: 0.796875 sec. Elapsed time: 0.782000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68058 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.446226048674727600
	sum(constr)	0.000000000271204150
	f(x_k) + sum(constr)	3.446226048945931500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 184

CPU time: 0.937500 sec. Elapsed time: 0.940000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66496 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	864.813371842342120000
	sum(constr)	0.062674009516824045
	f(x_k) + sum(constr)	864.876045851858980000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 9955 GradEv 9953 ConstrEv 9953 ConJacEv 9953 Iter 2518 MinorIter 9585

CPU time: 179.046875 sec. Elapsed time: 179.096000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65978 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	6.807647055092836300
	sum(constr)	0.000000004199359682
	f(x_k) + sum(constr)	6.807647059292196300
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 164 GradEv 162 ConstrEv 162 ConJacEv 162 Iter 130 MinorIter 11263

CPU time: 11.281250 sec. Elapsed time: 11.281000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6609 seconds

Starting numeric solver

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.685554056679422700
---	-----	----------------------

sum(constr)	0.000000003146099839
f(x_k) + sum(constr)	3.685554059825522500
f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 61 GradEv 59 ConstrEv 59 ConJacEv 59 Iter 54 MinorIter 291
 CPU time: 2.250000 sec. Elapsed time: 2.243000 sec.

Problem type appears to be: con
 Time for symbolic processing: 0.6573 seconds
 Starting numeric solver

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 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	8.496058506893641400
	sum(constr)	0.010973367007068663
	f(x_k) + sum(constr)	8.507031873900709600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=32.
 SNOPT 7.2-12 NLP code
 Major iteration limit reached

FuncEv 32684 GradEv 32682 ConstrEv 32682 ConJacEv 32682 Iter 6498 MinorIter 14799
 CPU time: 567.625000 sec. Elapsed time: 571.356000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.

Problem type appears to be: con
 Time for symbolic processing: 0.72683 seconds
 Starting numeric solver

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 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.253118815408724300
	sum(constr)	0.000000015388086031
	f(x_k) + sum(constr)	4.253118830796810600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 2936 GradEv 2934 ConstrEv 2934 ConJacEv 2934 Iter 836 MinorIter 12268
 CPU time: 60.281250 sec. Elapsed time: 60.988000 sec.
 Problem type appears to be: con

Time for symbolic processing: 0.7642 seconds

Starting numeric solver

===== * * * ===== * * *
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 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.442653489065597800
	sum(constr)	0.000000000263466665
	f(x_k) + sum(constr)	3.442653489329064300
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 118

CPU time: 0.859375 sec. Elapsed time: 0.871000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.69795 seconds

Starting numeric solver

===== * * * ===== * * *
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 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.568926694694585700
	sum(constr)	0.0000000021508781857
	f(x_k) + sum(constr)	3.568926716203367500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 40 GradEv 38 ConstrEv 38 ConJacEv 38 Iter 34 MinorIter 1732

CPU time: 2.390625 sec. Elapsed time: 2.380000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.85156 seconds

Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.915944333521694400
	sum(constr)	0.0000000027700173959
	f(x_k) + sum(constr)	3.915944361221868500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 134 GradEv 132 ConstrEv 132 ConJacEv 132 Iter 76 MinorIter 5591

CPU time: 6.312500 sec. Elapsed time: 6.350000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.7062 seconds

Starting numeric solver

===== * * * ===== * * *

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```

=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435922772536532200
              sum(|constr|)                    0.000000000063665360
              f(x_k) + sum(|constr|)            3.435922772600197700
              f(x_0)                          15.000000000000000000

```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 161

CPU time: 0.781250 sec. Elapsed time: 0.829000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.74541 seconds

Starting numeric solver

===== * * * ===== * * *

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```

=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480189598
              f(x_k) + sum(|constr|)            3.435021213384335400
              f(x_0)                          15.000000000000000000

```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 173

CPU time: 0.796875 sec. Elapsed time: 0.838000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.72104 seconds

Starting numeric solver

===== * * * ===== * * *

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```

=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211885473900
              sum(|constr|)                    0.000000000190964250
              f(x_k) + sum(|constr|)            3.435021212076438100
              f(x_0)                          15.000000000000000000

```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 875

CPU time: 1.109375 sec. Elapsed time: 1.120000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.70669 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.481878912030143000
	sum(constr)	0.000000000140261656
	f(x_k) + sum(constr)	3.481878912170404600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 22 GradEv 20 ConstrEv 20 ConJacEv 20 Iter 19 MinorIter 111

CPU time: 0.890625 sec. Elapsed time: 0.902000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.71675 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	1673.103114600982100000
	sum(constr)	0.162511418617594020
	f(x_k) + sum(constr)	1673.265626019599700000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 1015 GradEv 1013 ConstrEv 1014 ConJacEv 1013 Iter 285 MinorIter 11097

CPU time: 26.718750 sec. Elapsed time: 26.912000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.70029 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.506141644000527500
	sum(constr)	0.000000000795591044

$f(x_k) + \text{sum}(\text{constr})$	3.506141644796118700
$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 22 GradEv 20 ConstrEv 20 ConJacEv 20 Iter 19 MinorIter 132
CPU time: 0.859375 sec. Elapsed time: 0.859000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.7431 seconds
Starting numeric solver

===== * * * ===== * * *
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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211897872500
	$\text{sum}(\text{constr})$	0.000000001348751656
	$f(x_k) + \text{sum}(\text{constr})$	3.435021213246624200
	$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 336
CPU time: 0.843750 sec. Elapsed time: 0.880000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.76201 seconds
Starting numeric solver

===== * * * ===== * * *
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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	$\text{sum}(\text{constr})$	0.000000001480047679
	$f(x_k) + \text{sum}(\text{constr})$	3.435021213384193300
	$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 80
CPU time: 0.687500 sec. Elapsed time: 0.706000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.70339 seconds
Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904146600
                                         sum(|constr|)      0.000000001480038497
                                         f(x_k) + sum(|constr|) 3.435021213384184900
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter   71
CPU time: 0.718750 sec. Elapsed time: 0.737000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.71725 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904144800
                                         sum(|constr|)      0.000000001480207914
                                         f(x_k) + sum(|constr|) 3.435021213384352700
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter   85
CPU time: 0.750000 sec. Elapsed time: 0.789000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67448 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.454918357976582800
                                         sum(|constr|)      0.000000000413457602
                                         f(x_k) + sum(|constr|) 3.454918358390040500
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   30 GradEv   28 ConstrEv   28 ConJacEv   28 Iter    27 MinorIter  164
CPU time: 1.140625 sec. Elapsed time: 1.188000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.71166 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
```

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      4.854647148529378100
              sum(|constr|)                    0.000000001365621118
              f(x_k) + sum(|constr|)            4.854647149894999500
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 673 GradEv 671 ConstrEv 671 ConJacEv 671 Iter 216 MinorIter 3090
CPU time: 14.968750 sec. Elapsed time: 15.076000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.73184 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.438818085684625100
              sum(|constr|)                    0.000000000039364081
              f(x_k) + sum(|constr|)            3.438818085723989200
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 18 GradEv 16 ConstrEv 16 ConJacEv 16 Iter 15 MinorIter 97
CPU time: 0.625000 sec. Elapsed time: 0.643000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.91775 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.0000000001480125221
              f(x_k) + sum(|constr|)            3.435021213384271000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 180
CPU time: 0.921875 sec. Elapsed time: 0.904000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67288 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480072732
	f(x_k) + sum(constr)	3.435021213384218600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 74

CPU time: 0.703125 sec. Elapsed time: 0.710000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.732 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480175805
	f(x_k) + sum(constr)	3.435021213384321600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.734375 sec. Elapsed time: 0.735000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.69332 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145200
	sum(constr)	0.000000001480253257
	f(x_k) + sum(constr)	3.435021213384398500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.781250 sec. Elapsed time: 0.754000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.77555 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480231254
	f(x_k) + sum(constr)	3.435021213384376700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.828125 sec. Elapsed time: 0.828000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.7027 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480205821
	f(x_k) + sum(constr)	3.435021213384351400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.703125 sec. Elapsed time: 0.734000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.72218 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480164542
	f(x_k) + sum(constr)	3.435021213384311000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.750000 sec. Elapsed time: 0.740000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.70876 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480151004
	f(x_k) + sum(constr)	3.435021213384296800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.718750 sec. Elapsed time: 0.728000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.75155 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145200
	sum(constr)	0.000000001480182221
	f(x_k) + sum(constr)	3.435021213384327400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.781250 sec. Elapsed time: 0.763000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68205 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480159269
	f(x_k) + sum(constr)	3.435021213384304800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 144

CPU time: 0.906250 sec. Elapsed time: 0.931000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68175 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.452940756589742800
	sum(constr)	0.000000000237138030
	f(x_k) + sum(constr)	3.452940756826880600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 134

CPU time: 0.906250 sec. Elapsed time: 0.907000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.72866 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	609.040131082161790000
	sum(constr)	0.047907913292470017
	f(x_k) + sum(constr)	609.088038995454210000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 1486 GradEv 1484 ConstrEv 1484 ConJacEv 1484 Iter 385 MinorIter 5258

CPU time: 31.656250 sec. Elapsed time: 31.786000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.69663 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.521040776196098700
---	-----	----------------------

sum(constr)	0.000000000993430446
f(x_k) + sum(constr)	4.521040777189528900
f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 152 GradEv 150 ConstrEv 150 ConJacEv 150 Iter 129 MinorIter 1672
CPU time: 5.734375 sec. Elapsed time: 5.753000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.71123 seconds
Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.438237467598344000
	sum(constr)	0.000000000077882312
	f(x_k) + sum(constr)	3.438237467676226200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 93
CPU time: 0.828125 sec. Elapsed time: 0.825000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67442 seconds
Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480134951
	f(x_k) + sum(constr)	3.435021213384280800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 74
CPU time: 0.750000 sec. Elapsed time: 0.760000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.7076 seconds
Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480228049
              f(x_k) + sum(|constr|)            3.435021213384373600
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
 CPU time: 0.734375 sec. Elapsed time: 0.782000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.67056 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904146100
              sum(|constr|)                    0.000000001480158900
              f(x_k) + sum(|constr|)            3.435021213384305200
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 75
 CPU time: 0.765625 sec. Elapsed time: 0.779000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.67958 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904140300
              sum(|constr|)                    0.000000001479974060
              f(x_k) + sum(|constr|)            3.435021213384114300
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 577
 CPU time: 0.984375 sec. Elapsed time: 0.999000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.67246 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.500528993783767400
                                         sum(|constr|)  0.000000000196209723
                                         f(x_k) + sum(|constr|)  3.500528993979977100
                                         f(x_0)      15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv  20 GradEv  18 ConstrEv  18 ConJacEv  18 Iter   17 MinorIter  212
CPU time: 0.843750 sec. Elapsed time: 0.866000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.73765 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      732.600307518831190000
                                         sum(|constr|)  0.527726236135213520
                                         f(x_k) + sum(|constr|)  733.128033754966400000
                                         f(x_0)      15.000000000000000000
```

```
Solver: snopt.  EXIT=4.  INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized
```

```
FuncEv  947 GradEv  945 ConstrEv  945 ConJacEv  945 Iter  257 MinorIter 5356
CPU time: 21.343750 sec. Elapsed time: 21.459000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.67794 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      781.385495880117560000
                                         sum(|constr|)  0.551980921576397780
                                         f(x_k) + sum(|constr|)  781.937476801693950000
                                         f(x_0)      15.000000000000000000
```

```
Solver: snopt.  EXIT=4.  INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized
```

FuncEv 530 GradEv 528 ConstrEv 529 ConJacEv 528 Iter 156 MinorIter 3966

CPU time: 12.390625 sec. Elapsed time: 12.472000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.67915 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.931595232330979100
	sum(constr)	0.000495813081162276
	f(x_k) + sum(constr)	4.932091045412141400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=31.

SNOPT 7.2-12 NLP code

Iteration limit reached

FuncEv 3917 GradEv 3915 ConstrEv 3915 ConJacEv 3915 Iter 766 MinorIter 21660

CPU time: 78.359375 sec. Elapsed time: 78.718000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.68509 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	5.468302314030356800
	sum(constr)	0.000000000066848515
	f(x_k) + sum(constr)	5.468302314097205600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 119 GradEv 117 ConstrEv 117 ConJacEv 117 Iter 92 MinorIter 1851

CPU time: 4.828125 sec. Elapsed time: 4.783000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67411 seconds

Starting numeric solver

===== * * * ===== * * *

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      23.659964416797152000
              sum(|constr|)                    0.034586769818523065
              f(x_k) + sum(|constr|)           23.694551186615676000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=1. INFORM=32.

SNOPT 7.2-12 NLP code

Major iteration limit reached

FuncEv 34243 GradEv 34241 ConstrEv 34241 ConJacEv 34241 Iter 6498 MinorIter 14158

CPU time: 588.953125 sec. Elapsed time: 589.659000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.67741 seconds

Starting numeric solver

```
===== * * * =====
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.518422880367350700
              sum(|constr|)                    0.000000000032594025
              f(x_k) + sum(|constr|)           3.518422880399944700
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 29 GradEv 27 ConstrEv 27 ConJacEv 27 Iter 25 MinorIter 212

CPU time: 1.062500 sec. Elapsed time: 1.051000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65501 seconds

Starting numeric solver

```
===== * * * =====
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      5.603194202093807700
              sum(|constr|)                    0.000000028400593064
              f(x_k) + sum(|constr|)           5.603194230494400700
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 93 GradEv 91 ConstrEv 91 ConJacEv 91 Iter 84 MinorIter 1969

CPU time: 3.984375 sec. Elapsed time: 3.998000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64993 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	6.191308078154508000
	sum(constr)	0.000000009492485717
	f(x_k) + sum(constr)	6.191308087646993900
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 159 GradEv 157 ConstrEv 157 ConJacEv 157 Iter 102 MinorIter 2147

CPU time: 5.421875 sec. Elapsed time: 5.410000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65961 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.445196173493818100
	sum(constr)	0.000000000113803337
	f(x_k) + sum(constr)	3.445196173607621300
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 185

CPU time: 0.796875 sec. Elapsed time: 0.791000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.69702 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904144800
	sum(constr)	0.000000001480193779
	f(x_k) + sum(constr)	3.435021213384338500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 151

CPU time: 0.812500 sec. Elapsed time: 0.807000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67485 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211884310400
	sum(constr)	0.000000000008885547
	f(x_k) + sum(constr)	3.435021211893195800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 761

CPU time: 1.031250 sec. Elapsed time: 1.031000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6456 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.603235580388154600
	sum(constr)	0.000000001229472819
	f(x_k) + sum(constr)	3.603235581617627600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 54 GradEv 52 ConstrEv 52 ConJacEv 52 Iter 30 MinorIter 6616

CPU time: 5.140625 sec. Elapsed time: 5.132000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66797 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	90.034954667500898000
	sum(constr)	4.788635690777618400
	f(x_k) + sum(constr)	94.823590358278523000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=10. INFORM=44.
 SNOPT 7.2-12 NLP code
 Ill-conditioned null-space basis

FuncEv 2354 GradEv 2352 ConstrEv 2353 ConJacEv 2352 Iter 577 MinorIter 10695
 CPU time: 46.859375 sec. Elapsed time: 46.851000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65943 seconds

Starting numeric solver

===== * * * =====

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.093873603146866100
	sum(constr)	0.000000001139396053
	f(x_k) + sum(constr)	4.093873604286262200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 88 GradEv 86 ConstrEv 86 ConJacEv 86 Iter 83 MinorIter 2416
 CPU time: 4.109375 sec. Elapsed time: 4.126000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65603 seconds

Starting numeric solver

===== * * * =====

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435656504883279400
	sum(constr)	0.000000000697760058
	f(x_k) + sum(constr)	3.435656505581039500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 127
 CPU time: 0.750000 sec. Elapsed time: 0.753000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66365 seconds

Starting numeric solver

===== * * * =====

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)      0.000000001480294562
              f(x_k) + sum(|constr|)      3.435021213384440200
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 188
CPU time: 0.734375 sec. Elapsed time: 0.770000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.68672 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904146600
              sum(|constr|)      0.000000001480038497
              f(x_k) + sum(|constr|)      3.435021213384184900
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.718750 sec. Elapsed time: 0.726000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.64615 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.436597178501624900
              sum(|constr|)      0.000000000195390155
              f(x_k) + sum(|constr|)      3.436597178697015300
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 118
CPU time: 0.765625 sec. Elapsed time: 0.795000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.70885 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          4.347623990761069200
                                         sum(|constr|)      0.000000002280849444
                                         f(x_k) + sum(|constr|) 4.347623993041918500
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv  79 GradEv  77 ConstrEv  77 ConJacEv  77 Iter   66 MinorIter 1863
CPU time: 3.390625 sec. Elapsed time: 3.372000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.64841 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          7.501106651887397400
                                         sum(|constr|)      0.000000133889926332
                                         f(x_k) + sum(|constr|) 7.501106785777324100
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv 128 GradEv 126 ConstrEv 126 ConJacEv 126 Iter   84 MinorIter 3536
CPU time: 4.921875 sec. Elapsed time: 4.944000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66353 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.451737281805484300
                                         sum(|constr|)      0.000000000277651405
                                         f(x_k) + sum(|constr|) 3.451737282083135600
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv  18 GradEv  16 ConstrEv  16 ConJacEv  16 Iter   15 MinorIter  113
CPU time: 0.671875 sec. Elapsed time: 0.702000 sec.
Problem type appears to be: con
```

Time for symbolic processing: 0.64357 seconds

Starting numeric solver

==== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480156512
	f(x_k) + sum(constr)	3.435021213384302100
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 188

CPU time: 0.703125 sec. Elapsed time: 0.728000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6538 seconds

Starting numeric solver

==== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146100
	sum(constr)	0.000000001480299114
	f(x_k) + sum(constr)	3.435021213384445100
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 124

CPU time: 0.765625 sec. Elapsed time: 0.745000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64993 seconds

Starting numeric solver

==== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480175805
	f(x_k) + sum(constr)	3.435021213384321600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.703125 sec. Elapsed time: 0.715000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68311 seconds

Starting numeric solver

===== * * * ===== * * *

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145200
              sum(|constr|)                    0.000000001480253257
              f(x_k) + sum(|constr|)            3.435021213384398500
              f(x_0)                            15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.781250 sec. Elapsed time: 0.725000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68062 seconds

Starting numeric solver

===== * * * ===== * * *

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480231254
              f(x_k) + sum(|constr|)            3.435021213384376700
              f(x_0)                            15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.718750 sec. Elapsed time: 0.749000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67335 seconds

Starting numeric solver

===== * * * ===== * * *

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480205821
              f(x_k) + sum(|constr|)            3.435021213384351400
              f(x_0)                            15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.750000 sec. Elapsed time: 0.715000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.74278 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480164542
	f(x_k) + sum(constr)	3.435021213384311000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.718750 sec. Elapsed time: 0.734000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.90307 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480151004
	f(x_k) + sum(constr)	3.435021213384296800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.765625 sec. Elapsed time: 0.784000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68873 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480158213
	f(x_k) + sum(constr)	3.435021213384303900
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 199
CPU time: 0.734375 sec. Elapsed time: 0.734000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.68133 seconds
Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435403684052142000
	sum(constr)	0.000000000054849459
	f(x_k) + sum(constr)	3.435403684106991500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 209
CPU time: 0.890625 sec. Elapsed time: 0.870000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.69558 seconds
Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.720853984458159400
	sum(constr)	0.000000009497879528
	f(x_k) + sum(constr)	3.720853993956038800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 105 GradEv 103 ConstrEv 103 ConJacEv 103 Iter 91 MinorIter 3498
CPU time: 5.312500 sec. Elapsed time: 5.270000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.669 seconds
Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	449.943024534558840000
	sum(constr)	0.281104066891961100
	f(x_k) + sum(constr)	450.224128601450790000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 610 GradEv 608 ConstrEv 608 ConJacEv 608 Iter 177 MinorIter 5427
 CPU time: 14.515625 sec. Elapsed time: 14.536000 sec.
 Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.65411 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

Problem: --- 1: Optimal Robot Path Planning	f_k	599.775370762956410000
	sum(constr)	0.050072778162336032
	f(x_k) + sum(constr)	599.825443541118720000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 2493 GradEv 2491 ConstrEv 2491 ConJacEv 2491 Iter 638 MinorIter 5374
 CPU time: 46.609375 sec. Elapsed time: 46.619000 sec.
 Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.64404 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

Problem: --- 1: Optimal Robot Path Planning	f_k	3.452675620792817300
	sum(constr)	0.000000000247840954
	f(x_k) + sum(constr)	3.452675621040658200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 101
 CPU time: 0.671875 sec. Elapsed time: 0.688000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66033 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480124433
	f(x_k) + sum(constr)	3.435021213384270100
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 177

CPU time: 0.734375 sec. Elapsed time: 0.767000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64689 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480228049
	f(x_k) + sum(constr)	3.435021213384373600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.703125 sec. Elapsed time: 0.723000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66946 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904140800
	sum(constr)	0.000000001479978729
	f(x_k) + sum(constr)	3.435021213384119600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 127

CPU time: 0.734375 sec. Elapsed time: 0.760000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65494 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435986595040200000
	sum(constr)	0.000000000798218993
	f(x_k) + sum(constr)	3.435986595838418800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 18 GradEv 16 ConstrEv 16 ConJacEv 16 Iter 15 MinorIter 267

CPU time: 0.750000 sec. Elapsed time: 0.777000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64832 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.452764788834157300
	sum(constr)	0.000000016554291815
	f(x_k) + sum(constr)	4.452764805388449400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 184 GradEv 182 ConstrEv 182 ConJacEv 182 Iter 134 MinorIter 5827

CPU time: 8.546875 sec. Elapsed time: 8.568000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64339 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	734.687254156017390000
	sum(constr)	1.392807524503112600
	f(x_k) + sum(constr)	736.080061680520540000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 1023 GradEv 1021 ConstrEv 1021 ConJacEv 1021 Iter 193 MinorIter 5622

CPU time: 19.750000 sec. Elapsed time: 19.765000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.68957 seconds

Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      667.179033893472710000
              sum(|constr|)      1.249616549805219200
              f(x_k) + sum(|constr|)  668.428650443277890000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 124 GradEv 122 ConstrEv 122 ConJacEv 122 Iter 49 MinorIter 7195

CPU time: 7.625000 sec. Elapsed time: 7.597000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65701 seconds

Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      6850.142854038563200000
              sum(|constr|)      1.122114745093112800
              f(x_k) + sum(|constr|)  6851.264968783656500000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 14165 GradEv 14163 ConstrEv 14163 ConJacEv 14163 Iter 2620 MinorIter 13980

CPU time: 237.578125 sec. Elapsed time: 237.589000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65111 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	58400.747705707821000000
	sum(constr)	1.191943925646712400
	f(x_k) + sum(constr)	58401.939649633467000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=10. INFORM=41.

SNOPT 7.2-12 NLP code

Current point cannot be improved

FuncEv 693 GradEv 691 ConstrEv 692 ConJacEv 691 Iter 183 MinorIter 11392

CPU time: 21.406250 sec. Elapsed time: 21.402000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.87337 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	14810.072637444500000000
	sum(constr)	0.475080652827193580
	f(x_k) + sum(constr)	14810.547718097327000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 1843 GradEv 1841 ConstrEv 1841 ConJacEv 1841 Iter 479 MinorIter 4226

CPU time: 36.625000 sec. Elapsed time: 36.736000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65286 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.668131854515224600
              sum(|constr|)                    0.000000000048044964
              f(x_k) + sum(|constr|)            3.668131854563269700
              f(x_0)                          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv  492 GradEv  490 ConstrEv  490 ConJacEv  490 Iter   144 MinorIter 5722
CPU time: 12.140625 sec. Elapsed time: 12.210000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66645 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          8.782212811480908600
              sum(|constr|)                    0.000000295572560456
              f(x_k) + sum(|constr|)            8.782213107053468800
              f(x_0)                          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv  117 GradEv  115 ConstrEv  115 ConJacEv  115 Iter    41 MinorIter 3448
CPU time: 4.187500 sec. Elapsed time: 4.228000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.65833 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          9.797598020102483900
              sum(|constr|)                    0.000000000312806948
              f(x_k) + sum(|constr|)            9.797598020415291500
              f(x_0)                          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv  109 GradEv  107 ConstrEv  107 ConJacEv  107 Iter    90 MinorIter 3180
CPU time: 5.062500 sec. Elapsed time: 5.076000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66992 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
```

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.464368412652503600
              sum(|constr|)                    0.000000000265906184
              f(x_k) + sum(|constr|)            3.464368412918409600
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 34 GradEv 32 ConstrEv 32 ConJacEv 32 Iter 31 MinorIter 177

CPU time: 1.390625 sec. Elapsed time: 1.382000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.98192 seconds

Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211897707300
              sum(|constr|)                    0.000000001716663070
              f(x_k) + sum(|constr|)            3.435021213614370500
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 185

CPU time: 0.890625 sec. Elapsed time: 0.929000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6646 seconds

Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.453645360259535800
              sum(|constr|)                    0.000000000838850522
              f(x_k) + sum(|constr|)            3.453645361098386200
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 267

CPU time: 0.953125 sec. Elapsed time: 0.945000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65857 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	51.857149934504186000
	sum(constr)	0.048699036159226113
	f(x_k) + sum(constr)	51.905848970663413000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 1401 GradEv 1399 ConstrEv 1400 ConJacEv 1399 Iter 338 MinorIter 12395

CPU time: 31.687500 sec. Elapsed time: 31.731000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.7127 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	1039.606020124942900000
	sum(constr)	1.501723747693623800
	f(x_k) + sum(constr)	1041.107743872636500000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 11631 GradEv 11629 ConstrEv 11629 ConJacEv 11629 Iter 2331 MinorIter 13176

CPU time: 202.171875 sec. Elapsed time: 202.166000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.71716 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	1489.187508619472500000
	sum(constr)	0.129690464086737870
	f(x_k) + sum(constr)	1489.317199083559200000

f(x_0) 15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 2348 GradEv 2346 ConstrEv 2346 ConJacEv 2346 Iter 604 MinorIter 19474
CPU time: 56.234375 sec. Elapsed time: 56.353000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.69411 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.470110856970469300
	sum(constr)	0.000000000403348372
	f(x_k) + sum(constr)	3.470110857373817700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 151
CPU time: 0.796875 sec. Elapsed time: 0.814000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.83864 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211903974700
	sum(constr)	0.000000001478758817
	f(x_k) + sum(constr)	3.435021213382733600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 149
CPU time: 0.828125 sec. Elapsed time: 0.809000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67814 seconds

Starting numeric solver


```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904145700
                                         sum(|constr|)    0.000000001480264321
                                         f(x_k) + sum(|constr|) 3.435021213384410000
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 215
CPU time: 0.812500 sec. Elapsed time: 0.802000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.69175 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.446562279020624100
                                         sum(|constr|)    0.000000000385884603
                                         f(x_k) + sum(|constr|) 3.446562279406508700
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv 18 GradEv 16 ConstrEv 16 ConJacEv 16 Iter 15 MinorIter 312
CPU time: 0.875000 sec. Elapsed time: 0.858000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.68637 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          6.789231210490692400
                                         sum(|constr|)    0.000000102347504775
                                         f(x_k) + sum(|constr|) 6.789231312838197100
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv 73 GradEv 71 ConstrEv 71 ConJacEv 71 Iter 56 MinorIter 1812
CPU time: 2.843750 sec. Elapsed time: 2.874000 sec.
Problem type appears to be: con
```

Time for symbolic processing: 0.65631 seconds

Starting numeric solver

===== * * * ===== * * *

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```

=====
Problem: --- 1: Optimal Robot Path Planning    f_k      13.323627711619620000
              sum(|constr|)                    0.000000627776226111
              f(x_k) + sum(|constr|)            13.323628339395846000
              f(x_0)                            15.000000000000000000

```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 208 GradEv 206 ConstrEv 206 ConJacEv 206 Iter 78 MinorIter 3429

CPU time: 6.000000 sec. Elapsed time: 6.026000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6485 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```

=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.794646030526548600
              sum(|constr|)                    0.000000000574208494
              f(x_k) + sum(|constr|)            3.794646031100757300
              f(x_0)                            15.000000000000000000

```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 48 GradEv 46 ConstrEv 46 ConJacEv 46 Iter 42 MinorIter 1029

CPU time: 2.281250 sec. Elapsed time: 2.267000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.75776 seconds

Starting numeric solver

===== * * * ===== * * *

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```

=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435795687466537600
              sum(|constr|)                    0.000000000064487245
              f(x_k) + sum(|constr|)            3.435795687531024700
              f(x_0)                            15.000000000000000000

```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 255

CPU time: 0.875000 sec. Elapsed time: 0.893000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.74638 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480202754
              f(x_k) + sum(|constr|)            3.435021213384348300
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 173

CPU time: 0.781250 sec. Elapsed time: 0.783000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6812 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904146600
              sum(|constr|)                    0.000000001480038672
              f(x_k) + sum(|constr|)            3.435021213384185300
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.750000 sec. Elapsed time: 0.761000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68589 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145200
              sum(|constr|)                    0.000000001480253257
              f(x_k) + sum(|constr|)            3.435021213384398500
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.734375 sec. Elapsed time: 0.731000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66916 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480231254
	f(x_k) + sum(constr)	3.435021213384376700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.734375 sec. Elapsed time: 0.756000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6731 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480205821
	f(x_k) + sum(constr)	3.435021213384351400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.734375 sec. Elapsed time: 0.737000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68018 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480164542
	f(x_k) + sum(constr)	3.435021213384311000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.734375 sec. Elapsed time: 0.758000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67641 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480151004
	f(x_k) + sum(constr)	3.435021213384296800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.765625 sec. Elapsed time: 0.783000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66862 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480071358
	f(x_k) + sum(constr)	3.435021213384217700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 210

CPU time: 0.781250 sec. Elapsed time: 0.798000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.70391 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.444214464611784300
	sum(constr)	0.000000000116755998
	f(x_k) + sum(constr)	3.444214464728540200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 117
CPU time: 0.859375 sec. Elapsed time: 0.873000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.71792 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      6.049736849809694800
                                         sum(|constr|)  0.0000000006808478730
                                         f(x_k) + sum(|constr|)  6.049736856618174000
                                         f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 232 GradEv 230 ConstrEv 230 ConJacEv 230 Iter 150 MinorIter 9410
CPU time: 10.921875 sec. Elapsed time: 10.942000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66273 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      639.773387295293560000
                                         sum(|constr|)  0.468821470437576490
                                         f(x_k) + sum(|constr|)  640.242208765731110000
                                         f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 744 GradEv 742 ConstrEv 742 ConJacEv 742 Iter 219 MinorIter 4692
CPU time: 16.421875 sec. Elapsed time: 16.368000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)
In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.66774 seconds
Starting numeric solver

```
===== * * * ===== * * *
```

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      513.992296724303740000
              sum(|constr|)                    0.257179199529563420
              f(x_k) + sum(|constr|)            514.249475923833300000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 659 GradEv 657 ConstrEv 657 ConJacEv 657 Iter 182 MinorIter 5070

CPU time: 15.515625 sec. Elapsed time: 15.539000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.69287 seconds

Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.575512441522809200
              sum(|constr|)                    0.000000000537162770
              f(x_k) + sum(|constr|)            3.575512442059972000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 127 GradEv 125 ConstrEv 125 ConJacEv 125 Iter 90 MinorIter 6208

CPU time: 7.218750 sec. Elapsed time: 7.258000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66618 seconds

Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435365145425736300
              sum(|constr|)                    0.000000000058852434
              f(x_k) + sum(|constr|)            3.435365145484588800
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 195

CPU time: 0.859375 sec. Elapsed time: 0.863000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65236 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480193314
	f(x_k) + sum(constr)	3.435021213384339000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 178

CPU time: 0.796875 sec. Elapsed time: 0.773000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.71975 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480203089
	f(x_k) + sum(constr)	3.435021213384348700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 168

CPU time: 0.796875 sec. Elapsed time: 0.822000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.70652 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.468087400773398200
	sum(constr)	0.000000000655604473
	f(x_k) + sum(constr)	3.468087401429002600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 274

CPU time: 1.015625 sec. Elapsed time: 0.996000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64385 seconds

Starting numeric solver

==== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	806.477894931717290000
	sum(constr)	0.389340956733574440
	f(x_k) + sum(constr)	806.867235888450860000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 3900 GradEv 3898 ConstrEv 3898 ConJacEv 3898 Iter 997 MinorIter 8819

CPU time: 75.656250 sec. Elapsed time: 75.638000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.64853 seconds

Starting numeric solver

==== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	28.897994545755864000
	sum(constr)	5.373657711268121400
	f(x_k) + sum(constr)	34.271652257023987000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 334 GradEv 332 ConstrEv 332 ConJacEv 332 Iter 87 MinorIter 5999

CPU time: 9.000000 sec. Elapsed time: 8.954000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65226 seconds

Starting numeric solver

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      611.253786523303800000
              sum(|constr|)      2.471779110103877300
              f(x_k) + sum(|constr|) 613.725565633407650000
              f(x_0)      15.000000000000000000
```

```
Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized
```

```
FuncEv 7353 GradEv 7351 ConstrEv 7351 ConJacEv 7351 Iter 1291 MinorIter 11769
CPU time: 141.703125 sec. Elapsed time: 178.831000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)
```

```
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 1.2101 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      10734.522526219291000000
              sum(|constr|)      2.350977888549441000
              f(x_k) + sum(|constr|) 10736.873504107840000000
              f(x_0)      15.000000000000000000
```

```
Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized
```

```
FuncEv 6582 GradEv 6580 ConstrEv 6580 ConJacEv 6580 Iter 1422 MinorIter 5743
CPU time: 144.406250 sec. Elapsed time: 155.244000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)
```

```
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.69217 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      41.945303233130687000
              sum(|constr|)      2.050452980134471300
              f(x_k) + sum(|constr|) 43.995756213265160000
              f(x_0)      15.000000000000000000
```

```
Solver: snopt. EXIT=1. INFORM=31.
SNOPT 7.2-12 NLP code
Iteration limit reached
```

```
FuncEv 30202 GradEv 30200 ConstrEv 30201 ConJacEv 30200 Iter 4353 MinorIter 21660
CPU time: 648.515625 sec. Elapsed time: 755.339000 sec.
Warning: Solver returned ExitFlag = 1
```

```
> In ezsolve (line 237)
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 2.0606 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
Problem: --- 1: Optimal Robot Path Planning    f_k    45330.313024530027000000
              sum(|constr|)    1.006868856924291600
              f(x_k) + sum(|constr|) 45331.319893386950000000
              f(x_0)    15.000000000000000000
```

```
Solver: snopt. EXIT=10. INFORM=41.
SNOPT 7.2-12 NLP code
Current point cannot be improved
```

```
FuncEv 1155 GradEv 1153 ConstrEv 1154 ConJacEv 1153 Iter 293 MinorIter 9981
CPU time: 33.906250 sec. Elapsed time: 35.989000 sec.
Warning: Solver returned ExitFlag = 10
```

```
> In ezsolve (line 237)
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.7434 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
Problem: --- 1: Optimal Robot Path Planning    f_k    5.809407608848347100
              sum(|constr|)    0.000000002603363962
              f(x_k) + sum(|constr|) 5.809407611451710800
              f(x_0)    15.000000000000000000
```

```
Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv 215 GradEv 213 ConstrEv 213 ConJacEv 213 Iter 129 MinorIter 9325
CPU time: 10.500000 sec. Elapsed time: 10.523000 sec.
```

Problem type appears to be: con
 Time for symbolic processing: 0.68892 seconds
 Starting numeric solver

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      259.120800166998040000
              sum(|constr|)                    0.033029470000640708
              f(x_k) + sum(|constr|)            259.153829636998690000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 1723 GradEv 1721 ConstrEv 1721 ConJacEv 1721 Iter 388 MinorIter 4853
 CPU time: 36.328125 sec. Elapsed time: 37.872000 sec.
 Warning: Solver returned ExitFlag = 4

```
> In ezsolve (line 237)
   In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 1.4527 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      302.126389869036190000
              sum(|constr|)                    0.096972963846638657
              f(x_k) + sum(|constr|)            302.223362832882800000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 2230 GradEv 2228 ConstrEv 2228 ConJacEv 2228 Iter 447 MinorIter 3752
 CPU time: 44.187500 sec. Elapsed time: 44.860000 sec.
 Warning: Solver returned ExitFlag = 4

```
> In ezsolve (line 237)
   In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.69607 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      4.977777127190948100
```

sum(constr)	0.000000005328989564
f(x_k) + sum(constr)	4.977777132519937800
f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 102 GradEv 100 ConstrEv 100 ConJacEv 100 Iter 82 MinorIter 3303
 CPU time: 4.562500 sec. Elapsed time: 4.628000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.83168 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.439310005453276800
	sum(constr)	0.000000000063265834
	f(x_k) + sum(constr)	3.439310005516542600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 279
 CPU time: 0.921875 sec. Elapsed time: 0.944000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.69356 seconds
 Starting numeric solver

===== * * * ===== * * *
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 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.534329335190301300
	sum(constr)	0.000000000277359025
	f(x_k) + sum(constr)	3.534329335467660400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 183
 CPU time: 0.890625 sec. Elapsed time: 0.922000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.71495 seconds
 Starting numeric solver

===== * * * ===== * * *
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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      43.330646529998944000
              sum(|constr|)      0.682501069220221360
              f(x_k) + sum(|constr|)      44.013147599219167000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 12097 GradEv 12095 ConstrEv 12095 ConJacEv 12095 Iter 3129 MinorIter 18110
 CPU time: 229.062500 sec. Elapsed time: 229.131000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65409 seconds

Starting numeric solver

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      285.322560644375810000
              sum(|constr|)      6.530564422635891700
              f(x_k) + sum(|constr|)      291.853125067011720000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=10. INFORM=44.
 SNOPT 7.2-12 NLP code
 Ill-conditioned null-space basis

FuncEv 5832 GradEv 5830 ConstrEv 5831 ConJacEv 5830 Iter 1442 MinorIter 12680
 CPU time: 113.046875 sec. Elapsed time: 113.214000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.66992 seconds

Starting numeric solver

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      1192.930005786191300000
              sum(|constr|)      0.883805462148580130
              f(x_k) + sum(|constr|)      1193.813811248339800000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 2912 GradEv 2910 ConstrEv 2910 ConJacEv 2910 Iter 721 MinorIter 17008
CPU time: 67.468750 sec. Elapsed time: 90.962000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 1.3043 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.563251036608757100
	sum(constr)	0.000000000620309916
	f(x_k) + sum(constr)	3.563251037229067100
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 23 GradEv 21 ConstrEv 21 ConJacEv 21 Iter 20 MinorIter 152

CPU time: 1.000000 sec. Elapsed time: 1.034000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.7413 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211884207800
	sum(constr)	0.000000001416138439
	f(x_k) + sum(constr)	3.435021213300346200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 200

CPU time: 0.812500 sec. Elapsed time: 0.799000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.71713 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k        3.435055322756758000
                                         sum(|constr|)    0.000000001371960475
                                         f(x_k) + sum(|constr|) 3.435055324128718300
                                         f(x_0)        15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 162
CPU time: 0.843750 sec. Elapsed time: 0.906000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.83819 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k        3.518644601087721900
                                         sum(|constr|)    0.0000000008849838131
                                         f(x_k) + sum(|constr|) 3.518644609937560100
                                         f(x_0)        15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 26 GradEv 24 ConstrEv 24 ConJacEv 24 Iter 23 MinorIter 149
CPU time: 1.046875 sec. Elapsed time: 1.044000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.70056 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k        10.073616074801787000
                                         sum(|constr|)    0.000000000071029497
                                         f(x_k) + sum(|constr|) 10.073616074872817000
                                         f(x_0)        15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 141 GradEv 139 ConstrEv 139 ConJacEv 139 Iter 98 MinorIter 2309
CPU time: 5.312500 sec. Elapsed time: 5.133000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.72493 seconds
Starting numeric solver

```
===== * * * ===== * * *
```


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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k    11873.356218031575000000
              sum(|constr|)    0.135019533485136510
              f(x_k) + sum(|constr|)    11873.491237565060000000
              f(x_0)    15.00000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 2657 GradEv 2655 ConstrEv 2655 ConJacEv 2655 Iter 682 MinorIter 4550
CPU time: 56.078125 sec. Elapsed time: 71.655000 sec.
Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)
In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 1.1576 seconds
Starting numeric solver

```
===== * * * ===== * * *
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=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k    6.026773010010528800
              sum(|constr|)    0.000000055584494763
              f(x_k) + sum(|constr|)    6.026773065595023100
              f(x_0)    15.00000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 114 GradEv 112 ConstrEv 112 ConJacEv 112 Iter 62 MinorIter 3304
CPU time: 4.750000 sec. Elapsed time: 4.784000 sec.

Problem type appears to be: con
Time for symbolic processing: 0.7002 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k    3.444158826350178800
              sum(|constr|)    0.000000000285919908
              f(x_k) + sum(|constr|)    3.444158826636098500
              f(x_0)    15.00000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 18 GradEv 16 ConstrEv 16 ConJacEv 16 Iter 15 MinorIter 94

CPU time: 0.687500 sec. Elapsed time: 0.699000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67311 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480182928
	f(x_k) + sum(constr)	3.435021213384328800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 310

CPU time: 0.843750 sec. Elapsed time: 0.840000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68742 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904144800
	sum(constr)	0.000000001480119027
	f(x_k) + sum(constr)	3.435021213384263900
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 74

CPU time: 0.703125 sec. Elapsed time: 0.739000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66225 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145200
	sum(constr)	0.000000001480253257
	f(x_k) + sum(constr)	3.435021213384398500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.703125 sec. Elapsed time: 0.727000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66263 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480231254
	f(x_k) + sum(constr)	3.435021213384376700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.718750 sec. Elapsed time: 0.741000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64769 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480205821
	f(x_k) + sum(constr)	3.435021213384351400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.703125 sec. Elapsed time: 0.727000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65773 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480164542
	f(x_k) + sum(constr)	3.435021213384311000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.703125 sec. Elapsed time: 0.718000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66485 seconds
Starting numeric solver

==== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145200
	sum(constr)	0.000000001480205933
	f(x_k) + sum(constr)	3.435021213384351000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 192
CPU time: 0.765625 sec. Elapsed time: 0.767000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.65718 seconds
Starting numeric solver

==== * * * ===== * * *
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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145200
	sum(constr)	0.000000001480173532
	f(x_k) + sum(constr)	3.435021213384318500
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 158
CPU time: 0.718750 sec. Elapsed time: 0.734000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67902 seconds
Starting numeric solver

==== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.464524167175904600
	sum(constr)	0.00000000078121329
	f(x_k) + sum(constr)	3.464524167254026100

f(x_0) 15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 40 GradEv 38 ConstrEv 38 ConJacEv 38 Iter 36 MinorIter 218
CPU time: 1.500000 sec. Elapsed time: 1.541000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.64861 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning f_k 535.305102123984620000
              sum(|constr|) 0.162287063754227330
              f(x_k) + sum(|constr|) 535.467389187738830000
              f(x_0) 15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 1426 GradEv 1424 ConstrEv 1424 ConJacEv 1424 Iter 358 MinorIter 6792
CPU time: 28.921875 sec. Elapsed time: 28.890000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.66764 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning f_k 477.529997633113570000
              sum(|constr|) 1.128176196062202300
              f(x_k) + sum(|constr|) 478.658173829175780000
              f(x_0) 15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 125 GradEv 123 ConstrEv 123 ConJacEv 123 Iter 56 MinorIter 5425
CPU time: 5.578125 sec. Elapsed time: 5.589000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65133 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	539.169870784597830000
	sum(constr)	0.737196649109184920
	f(x_k) + sum(constr)	539.907067433706970000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=32.

SNOPT 7.2-12 NLP code

Major iteration limit reached

FuncEv 13574 GradEv 13572 ConstrEv 13572 ConJacEv 13572 Iter 6498 MinorIter 6412

CPU time: 306.218750 sec. Elapsed time: 306.148000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.67086 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	5.768079221502008000
	sum(constr)	0.000000035076825859
	f(x_k) + sum(constr)	5.768079256578833900
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 106 GradEv 104 ConstrEv 104 ConJacEv 104 Iter 61 MinorIter 3496

CPU time: 4.265625 sec. Elapsed time: 4.262000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64931 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.444021976645069900
	sum(constr)	0.000000000084286998
	f(x_k) + sum(constr)	3.444021976729356700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 201
CPU time: 0.906250 sec. Elapsed time: 0.917000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.64689 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904145700
                                         sum(|constr|)      0.0000000001480198453
                                         f(x_k) + sum(|constr|) 3.435021213384344300
                                         f(x_0)          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 175
CPU time: 0.671875 sec. Elapsed time: 0.687000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.65922 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211902796500
                                         sum(|constr|)      0.0000000001467107194
                                         f(x_k) + sum(|constr|) 3.435021213369903800
                                         f(x_0)          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 183
CPU time: 0.765625 sec. Elapsed time: 0.767000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66641 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k          3.558300069434805900
                                         sum(|constr|)      0.000000000013214298
```

$f(x_k) + \text{sum}(\text{constr})$	3.558300069448020200
$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 67 GradEv 65 ConstrEv 65 ConJacEv 65 Iter 63 MinorIter 1707
 CPU time: 3.281250 sec. Elapsed time: 3.307000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.65262 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	685.016226146274450000
	$\text{sum}(\text{constr})$	1.356476550424575500
	$f(x_k) + \text{sum}(\text{constr})$	686.372702696698980000
	$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 3683 GradEv 3681 ConstrEv 3681 ConJacEv 3681 Iter 709 MinorIter 8612
 CPU time: 64.765625 sec. Elapsed time: 64.656000 sec.
 Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.70149 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	196.867826707637140000
	$\text{sum}(\text{constr})$	2.686335366032056800
	$f(x_k) + \text{sum}(\text{constr})$	199.554162073669200000
	$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 114 GradEv 112 ConstrEv 112 ConJacEv 112 Iter 49 MinorIter 13644
 CPU time: 10.984375 sec. Elapsed time: 10.991000 sec.
 Warning: Solver returned ExitFlag = 4
 > In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.9078 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      48.773409457132452000
              sum(|constr|)      8.204429582809501300
              f(x_k) + sum(|constr|) 56.977839039941955000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 205 GradEv 203 ConstrEv 203 ConJacEv 203 Iter 77 MinorIter 8796
CPU time: 10.203125 sec. Elapsed time: 10.157000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.6483 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      93.538890906481953000
              sum(|constr|)      10.697485241951204000
              f(x_k) + sum(|constr|) 104.236376148433150000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 192 GradEv 190 ConstrEv 191 ConJacEv 190 Iter 66 MinorIter 5279
CPU time: 6.843750 sec. Elapsed time: 6.834000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.65528 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k    98536.148702736202000000
              sum(|constr|)    3.058142147956598700
              f(x_k) + sum(|constr|)    98539.206844884160000000
              f(x_0)    15.00000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 3309 GradEv 3307 ConstrEv 3307 ConJacEv 3307 Iter 825 MinorIter 8257
 CPU time: 63.671875 sec. Elapsed time: 63.710000 sec.
 Warning: Solver returned ExitFlag = 4
 > In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.66161 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k    558.042592664047330000
              sum(|constr|)    2.351280175665126900
              f(x_k) + sum(|constr|)    560.393872839712460000
              f(x_0)    15.00000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 973 GradEv 971 ConstrEv 971 ConJacEv 971 Iter 251 MinorIter 4403
 CPU time: 20.140625 sec. Elapsed time: 20.138000 sec.
 Warning: Solver returned ExitFlag = 4
 > In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.65051 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k    9.838914441425171000
              sum(|constr|)    0.000002934069201073
              f(x_k) + sum(|constr|)    9.838917375494372000
              f(x_0)    15.00000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 650 GradEv 648 ConstrEv 648 ConJacEv 648 Iter 153 MinorIter 8222
CPU time: 15.125000 sec. Elapsed time: 15.127000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66099 seconds
Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	185.746191197075230000
	sum(constr)	0.446134485904867260
	f(x_k) + sum(constr)	186.192325682980110000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 387 GradEv 385 ConstrEv 385 ConJacEv 385 Iter 77 MinorIter 6201
CPU time: 9.953125 sec. Elapsed time: 9.950000 sec.
Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.63662 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	195.660338278894220000
	sum(constr)	0.384128770897848860
	f(x_k) + sum(constr)	196.044467049792080000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 367 GradEv 365 ConstrEv 365 ConJacEv 365 Iter 88 MinorIter 3322
CPU time: 8.593750 sec. Elapsed time: 8.593000 sec.
Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.72501 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	7.795141916970355700
	sum(constr)	0.000000004758489823
	f(x_k) + sum(constr)	7.795141921728845300
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 137 GradEv 135 ConstrEv 135 ConJacEv 135 Iter 99 MinorIter 2329

CPU time: 4.859375 sec. Elapsed time: 4.855000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6411 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.489725980514682700
	sum(constr)	0.000000000333295277
	f(x_k) + sum(constr)	3.489725980847977900
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 22 GradEv 20 ConstrEv 20 ConJacEv 20 Iter 19 MinorIter 257

CPU time: 0.968750 sec. Elapsed time: 0.994000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.91299 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.439022254192882300
	sum(constr)	0.000000001531402970
	f(x_k) + sum(constr)	4.439022255724284900
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 151 GradEv 149 ConstrEv 149 ConJacEv 149 Iter 117 MinorIter 2642

CPU time: 6.140625 sec. Elapsed time: 6.144000 sec.

Problem type appears to be: con
 Time for symbolic processing: 0.67044 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	2978.661307653104800000
	sum(constr)	8.208285487579283700
	f(x_k) + sum(constr)	2986.869593140684200000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=31.
 SNOPT 7.2-12 NLP code
 Iteration limit reached

FuncEv 155 GradEv 153 ConstrEv 153 ConJacEv 153 Iter 55 MinorIter 21660
 CPU time: 13.968750 sec. Elapsed time: 13.990000 sec.
 Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.

Problem type appears to be: con
 Time for symbolic processing: 0.64404 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	89.693125464938220000
	sum(constr)	47.519066990518340000
	f(x_k) + sum(constr)	137.212192455456550000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=31.
 SNOPT 7.2-12 NLP code
 Iteration limit reached

FuncEv 14316 GradEv 14314 ConstrEv 14315 ConJacEv 14314 Iter 2429 MinorIter 21660
 CPU time: 299.734375 sec. Elapsed time: 337.275000 sec.
 Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.

Problem type appears to be: con
 Time for symbolic processing: 1.0019 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	70.995789708249063000
---	-----	-----------------------

sum(constr)	3.928530902685604800
f(x_k) + sum(constr)	74.924320610934672000
f(x_0)	15.000000000000000000

Solver: snopt. EXIT=10. INFORM=44.

SNOPT 7.2-12 NLP code

Ill-conditioned null-space basis

FuncEv 16516 GradEv 16514 ConstrEv 16515 ConJacEv 16514 Iter 2786 MinorIter 19494

CPU time: 306.296875 sec. Elapsed time: 321.975000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.74178 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.772914765531812300
	sum(constr)	0.000000030673217315
	f(x_k) + sum(constr)	4.772914796205030000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 165 GradEv 163 ConstrEv 163 ConJacEv 163 Iter 111 MinorIter 3645

CPU time: 6.968750 sec. Elapsed time: 6.983000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6471 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.446350332816877000
	sum(constr)	0.00000000114524867
	f(x_k) + sum(constr)	3.446350332931401800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 260

CPU time: 0.765625 sec. Elapsed time: 0.785000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64703 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.440445859391475700
	sum(constr)	0.000000000207541766
	f(x_k) + sum(constr)	3.440445859599017700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 18 GradEv 16 ConstrEv 16 ConJacEv 16 Iter 15 MinorIter 210

CPU time: 0.796875 sec. Elapsed time: 0.740000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66039 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	5.496813573004713400
	sum(constr)	0.000000045443795935
	f(x_k) + sum(constr)	5.496813618448509700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 36 GradEv 34 ConstrEv 34 ConJacEv 34 Iter 32 MinorIter 717

CPU time: 1.531250 sec. Elapsed time: 1.564000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.64446 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	23307.621541569035000000
	sum(constr)	0.124105466607736790
	f(x_k) + sum(constr)	23307.745647035641000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=10. INFORM=41.

SNOPT 7.2-12 NLP code

Current point cannot be improved

FuncEv 2094 GradEv 2092 ConstrEv 2093 ConJacEv 2092 Iter 539 MinorIter 5262

CPU time: 40.578125 sec. Elapsed time: 40.605000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.66813 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	89132.188308687328000000
	sum(constr)	0.476086487819183390
	f(x_k) + sum(constr)	89132.664395175147000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 1926 GradEv 1924 ConstrEv 1924 ConJacEv 1924 Iter 510 MinorIter 5875

CPU time: 38.390625 sec. Elapsed time: 38.283000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65069 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

Problem: --- 1: Optimal Robot Path Planning	f_k	9.225527060761141500
	sum(constr)	0.000000124543804908
	f(x_k) + sum(constr)	9.225527185304946100
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 232 GradEv 230 ConstrEv 230 ConJacEv 230 Iter 78 MinorIter 8374

CPU time: 8.234375 sec. Elapsed time: 8.269000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.67632 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====


```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.461605570316599800
                                         sum(|constr|)      0.000000000750052362
                                         f(x_k) + sum(|constr|)  3.461605571066652200
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   21 GradEv   19 ConstrEv   19 ConJacEv   19 Iter    18 MinorIter  153
CPU time: 0.796875 sec. Elapsed time: 0.800000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67257 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904145700
                                         sum(|constr|)      0.000000001480093758
                                         f(x_k) + sum(|constr|)  3.435021213384239500
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter  209
CPU time: 0.734375 sec. Elapsed time: 0.760000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.6513 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904145700
                                         sum(|constr|)      0.000000001480083547
                                         f(x_k) + sum(|constr|)  3.435021213384229300
                                         f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter  155
CPU time: 0.750000 sec. Elapsed time: 0.761000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.63689 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
```

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```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145200
              sum(|constr|)                    0.000000001480253257
              f(x_k) + sum(|constr|)            3.435021213384398500
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.703125 sec. Elapsed time: 0.719000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.69879 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480231254
              f(x_k) + sum(|constr|)            3.435021213384376700
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.734375 sec. Elapsed time: 0.744000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.76966 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      3.435021211904145700
              sum(|constr|)                    0.000000001480205821
              f(x_k) + sum(|constr|)            3.435021213384351400
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.781250 sec. Elapsed time: 0.859000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66483 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480164542
	f(x_k) + sum(constr)	3.435021213384311000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.703125 sec. Elapsed time: 0.715000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6413 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146100
	sum(constr)	0.000000001480123076
	f(x_k) + sum(constr)	3.435021213384269200
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 212

CPU time: 0.718750 sec. Elapsed time: 0.742000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.6442 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.438358581388655000
	sum(constr)	0.00000000040608425
	f(x_k) + sum(constr)	3.438358581429263400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 111

CPU time: 0.828125 sec. Elapsed time: 0.836000 sec.

Problem type appears to be: con
 Time for symbolic processing: 0.64092 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	4.800357130610462000
	sum(constr)	0.000000197721625760
	f(x_k) + sum(constr)	4.800357328332087700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 109 GradEv 107 ConstrEv 107 ConJacEv 107 Iter 71 MinorIter 1498
 CPU time: 3.546875 sec. Elapsed time: 3.540000 sec.

Problem type appears to be: con
 Time for symbolic processing: 0.6416 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	591.981949908227420000
	sum(constr)	0.740574357005928880
	f(x_k) + sum(constr)	592.722524265233350000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 15710 GradEv 15708 ConstrEv 15708 ConJacEv 15708 Iter 5098 MinorIter 4164
 CPU time: 304.718750 sec. Elapsed time: 323.580000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con
 Time for symbolic processing: 1.2184 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	497.531228361734860000
	sum(constr)	1.975115342747622700
	f(x_k) + sum(constr)	499.506343704482500000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=32.
 SNOPT 7.2-12 NLP code
 Major iteration limit reached

FuncEv 13828 GradEv 13826 ConstrEv 13826 ConJacEv 13826 Iter 6498 MinorIter 6827
 CPU time: 328.906250 sec. Elapsed time: 328.987000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.70017 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	588.815232941928570000
	sum(constr)	1.402264235964265900
	f(x_k) + sum(constr)	590.217497177892820000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 14151 GradEv 14149 ConstrEv 14149 ConJacEv 14149 Iter 2853 MinorIter 6336
 CPU time: 237.781250 sec. Elapsed time: 237.713000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.66567 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	597.048354861254780000
	sum(constr)	0.067465958878758378
	f(x_k) + sum(constr)	597.115820820133540000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 1416 GradEv 1414 ConstrEv 1414 ConJacEv 1414 Iter 370 MinorIter 9320
 CPU time: 30.046875 sec. Elapsed time: 30.001000 sec.

Warning: Solver returned ExitFlag = 4

```
> In ezsolve (line 237)
In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.67477 seconds
Starting numeric solver
===== * * * =====
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k          3.464190446402085400
              sum(|constr|)          0.000000000165276088
              f(x_k) + sum(|constr|)      3.464190446567361600
              f(x_0)          15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   26 GradEv   24 ConstrEv   24 ConJacEv   24 Iter    23 MinorIter  162
CPU time: 1.031250 sec. Elapsed time: 1.048000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.77984 seconds
Starting numeric solver
===== * * * =====
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k          3.435021211904146600
              sum(|constr|)          0.0000000001480160913
              f(x_k) + sum(|constr|)      3.435021213384307400
              f(x_0)          15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter    16 MinorIter  149
CPU time: 0.718750 sec. Elapsed time: 0.754000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.71169 seconds
Starting numeric solver
===== * * * =====
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k          3.446378499825852000
              sum(|constr|)          0.000000000304559477
              f(x_k) + sum(|constr|)      3.446378500130411500
              f(x_0)          15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
```

SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 249

CPU time: 1.015625 sec. Elapsed time: 0.997000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.66445 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	713.414140855731380000
	sum(constr)	0.106237865093967380
	f(x_k) + sum(constr)	713.520378720825310000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=10. INFORM=41.

SNOPT 7.2-12 NLP code

Current point cannot be improved

FuncEv 4199 GradEv 4197 ConstrEv 4198 ConJacEv 4197 Iter 1619 MinorIter 8197

CPU time: 92.343750 sec. Elapsed time: 92.269000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.66208 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	491.462765667162330000
	sum(constr)	1.969194891830266400
	f(x_k) + sum(constr)	493.431960558992610000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 343 GradEv 341 ConstrEv 342 ConJacEv 341 Iter 104 MinorIter 7143

CPU time: 10.000000 sec. Elapsed time: 9.992000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.68007 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k 1104783.5782989142000000000
                                         sum(|constr|)      4.679456878897562800
                                         f(x_k) + sum(|constr|) 1104788.2577557932000000000
                                         f(x_0)      15.0000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 1473 GradEv 1471 ConstrEv 1471 ConJacEv 1471 Iter 460 MinorIter 9667

CPU time: 35.375000 sec. Elapsed time: 35.366000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 1.0092 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k      387.961172537927610000
                                         sum(|constr|)      11.481040834981510000
                                         f(x_k) + sum(|constr|) 399.442213372909120000
                                         f(x_0)      15.0000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 160 GradEv 158 ConstrEv 158 ConJacEv 158 Iter 63 MinorIter 7657

CPU time: 8.156250 sec. Elapsed time: 8.182000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.66542 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k      257.175121415986840000
                                         sum(|constr|)      7.085467708216904200
                                         f(x_k) + sum(|constr|) 264.260589124203760000
```


f(x_0) 15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 8329 GradEv 8327 ConstrEv 8327 ConJacEv 8327 Iter 1677 MinorIter 4281
CPU time: 141.828125 sec. Elapsed time: 141.810000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.65851 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	65838.288690517715000000
	sum(constr)	4.546796000622033600
	f(x_k) + sum(constr)	65842.835486518336000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=10. INFORM=41.
SNOPT 7.2-12 NLP code
Current point cannot be improved

FuncEv 11266 GradEv 11264 ConstrEv 11265 ConJacEv 11264 Iter 1755 MinorIter 13924
CPU time: 190.828125 sec. Elapsed time: 210.664000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 1.1988 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	21.936914356573403000
	sum(constr)	3.351298142935625400
	f(x_k) + sum(constr)	25.288212499509029000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 446 GradEv 444 ConstrEv 444 ConJacEv 444 Iter 129 MinorIter 5041

CPU time: 11.218750 sec. Elapsed time: 11.243000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.68022 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	13.894106852010658000
	sum(constr)	0.000000589687217641
	f(x_k) + sum(constr)	13.894107441697876000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 149 GradEv 147 ConstrEv 147 ConJacEv 147 Iter 86 MinorIter 5528

CPU time: 6.953125 sec. Elapsed time: 6.983000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.70615 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	140.963574196530690000
	sum(constr)	1.303048322038287400
	f(x_k) + sum(constr)	142.266622518568970000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 84 GradEv 82 ConstrEv 82 ConJacEv 82 Iter 27 MinorIter 3502

CPU time: 3.859375 sec. Elapsed time: 3.896000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.67138 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```

Problem: --- 1: Optimal Robot Path Planning    f_k      202.974069849567850000
              sum(|constr|)                    1.474472033109636400
              f(x_k) + sum(|constr|)            204.448541882677490000
              f(x_0)                          15.000000000000000000

```

```

Solver: snopt.  EXIT=4.  INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

```

```

FuncEv  61 GradEv  59 ConstrEv  59 ConJacEv  59 Iter   27 MinorIter 2648

```

```

CPU time: 3.046875 sec. Elapsed time: 3.070000 sec.

```

```

Warning: Solver returned ExitFlag = 4

```

```

> In ezsolve (line 237)

```

```

    In robot_change_of_obs_rad (line 121)

```

```

The returned solution may be incorrect.

```

```

Problem type appears to be: con

```

```

Time for symbolic processing: 0.70869 seconds

```

```

Starting numeric solver

```

```

===== * * * ===== * * *

```

```

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```

```

Problem: --- 1: Optimal Robot Path Planning    f_k      12.204044698883726000
              sum(|constr|)                    0.000000071713526536
              f(x_k) + sum(|constr|)            12.204044770597251000
              f(x_0)                          15.000000000000000000

```

```

Solver: snopt.  EXIT=0.  INFORM=1.

```

```

SNOPT 7.2-12 NLP code

```

```

Optimality conditions satisfied

```

```

FuncEv 1446 GradEv 1444 ConstrEv 1444 ConJacEv 1444 Iter  277 MinorIter 12147

```

```

CPU time: 30.437500 sec. Elapsed time: 30.404000 sec.

```

```

Problem type appears to be: con

```

```

Time for symbolic processing: 0.66998 seconds

```

```

Starting numeric solver

```

```

===== * * * ===== * * *

```

```

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```

```

Problem: --- 1: Optimal Robot Path Planning    f_k      4.056274036369571500
              sum(|constr|)                    0.000000000521340218
              f(x_k) + sum(|constr|)            4.056274036890911800
              f(x_0)                          15.000000000000000000

```

```

Solver: snopt.  EXIT=0.  INFORM=1.

```

```

SNOPT 7.2-12 NLP code

```

```

Optimality conditions satisfied

```

```

FuncEv  49 GradEv  47 ConstrEv  47 ConJacEv  47 Iter   45 MinorIter 1139

```

```

CPU time: 2.375000 sec. Elapsed time: 2.413000 sec.

```

Problem type appears to be: con
 Time for symbolic processing: 0.68057 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      18.994453657235656000
              sum(|constr|)                    0.655830324400119460
              f(x_k) + sum(|constr|)            19.650283981635777000
              f(x_0)                            15.000000000000000000
```

Solver: snopt. EXIT=1. INFORM=32.
 SNOPT 7.2-12 NLP code
 Major iteration limit reached

FuncEv 37625 GradEv 37623 ConstrEv 37623 ConJacEv 37623 Iter 6498 MinorIter 15197
 CPU time: 623.890625 sec. Elapsed time: 656.607000 sec.
 Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.

Problem type appears to be: con
 Time for symbolic processing: 1.1617 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      209.601346730641520000
              sum(|constr|)                    6.158174044653550900
              f(x_k) + sum(|constr|)            215.759520775295070000
              f(x_0)                            15.000000000000000000
```

Solver: snopt. EXIT=1. INFORM=31.
 SNOPT 7.2-12 NLP code
 Iteration limit reached

FuncEv 27089 GradEv 27087 ConstrEv 27087 ConJacEv 27087 Iter 4186 MinorIter 21660
 CPU time: 435.453125 sec. Elapsed time: 435.066000 sec.
 Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.

Problem type appears to be: con
 Time for symbolic processing: 0.73408 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      5159.604082724567900000
```

sum(constr)	11.278706868638610000
f(x_k) + sum(constr)	5170.882789593206300000
f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=31.
 SNOPT 7.2-12 NLP code
 Iteration limit reached

FuncEv 27698 GradEv 27696 ConstrEv 27696 ConJacEv 27696 Iter 4875 MinorIter 21660
 CPU time: 466.890625 sec. Elapsed time: 468.821000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.68016 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	29.785814220273920000
	sum(constr)	2.153489690349420700
	f(x_k) + sum(constr)	31.939303910623341000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=31.
 SNOPT 7.2-12 NLP code
 Iteration limit reached

FuncEv 27414 GradEv 27412 ConstrEv 27412 ConJacEv 27412 Iter 4713 MinorIter 21660
 CPU time: 488.375000 sec. Elapsed time: 534.761000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 1.184 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	1139.401699514036400000
	sum(constr)	0.817144327104495470
	f(x_k) + sum(constr)	1140.218843841140800000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=32.
 SNOPT 7.2-12 NLP code
 Major iteration limit reached

FuncEv 31435 GradEv 31433 ConstrEv 31433 ConJacEv 31433 Iter 6498 MinorIter 21114
 CPU time: 556.578125 sec. Elapsed time: 556.386000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.69058 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.522358247437656700
	sum(constr)	0.000000000140697752
	f(x_k) + sum(constr)	3.522358247578354400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 21 GradEv 19 ConstrEv 19 ConJacEv 19 Iter 18 MinorIter 345

CPU time: 0.921875 sec. Elapsed time: 0.935000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.68413 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.454969895185676400
	sum(constr)	0.000000000328272688
	f(x_k) + sum(constr)	3.454969895513949000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 18 GradEv 16 ConstrEv 16 ConJacEv 16 Iter 15 MinorIter 189

CPU time: 0.765625 sec. Elapsed time: 0.754000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.65446 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	8.553375217909467300
	sum(constr)	0.000000006510916341

$f(x_k) + \text{sum}(\text{constr})$	8.553375224420383600
$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 84 GradEv 82 ConstrEv 82 ConJacEv 82 Iter 74 MinorIter 1939
 CPU time: 3.390625 sec. Elapsed time: 3.415000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.67879 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	83939.641269810760000000
	$\text{sum}(\text{constr})$	0.497898897650341400
	$f(x_k) + \text{sum}(\text{constr})$	83940.139168708411000000
	$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 4865 GradEv 4863 ConstrEv 4863 ConJacEv 4863 Iter 1240 MinorIter 7499
 CPU time: 91.406250 sec. Elapsed time: 91.303000 sec.
 Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.66586 seconds
 Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
 =====

Problem: --- 1: Optimal Robot Path Planning	f_k	202540.594119630930000000
	$\text{sum}(\text{constr})$	0.990315957416816770
	$f(x_k) + \text{sum}(\text{constr})$	202541.584435588330000000
	$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 1541 GradEv 1539 ConstrEv 1539 ConJacEv 1539 Iter 413 MinorIter 3266
 CPU time: 29.890625 sec. Elapsed time: 29.889000 sec.
 Warning: Solver returned ExitFlag = 4
 > In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.66325 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k    24049.172934957191000000
              sum(|constr|)    0.085288602713039466
              f(x_k) + sum(|constr|)  24049.258223559904000000
              f(x_0)    15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 3029 GradEv 3027 ConstrEv 3027 ConJacEv 3027 Iter 789 MinorIter 4547
CPU time: 56.671875 sec. Elapsed time: 56.561000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.65296 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k    4.859214750687544700
              sum(|constr|)    0.000000000489505937
              f(x_k) + sum(|constr|)  4.859214751177050900
              f(x_0)    15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 39 GradEv 37 ConstrEv 37 ConJacEv 37 Iter 36 MinorIter 934
CPU time: 1.734375 sec. Elapsed time: 1.728000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66049 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k    3.438837615198888600
              sum(|constr|)    0.000000000618602444
              f(x_k) + sum(|constr|)  3.438837615817491100
```


f(x_0) 15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 266
CPU time: 0.796875 sec. Elapsed time: 0.768000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.70066 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning f_k 3.435021211904144800
              sum(|constr|) 0.000000001480094158
              f(x_k) + sum(|constr|) 3.435021213384239000
              f(x_0) 15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 186
CPU time: 0.781250 sec. Elapsed time: 0.783000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.65197 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning f_k 3.435021211904146100
              sum(|constr|) 0.000000001480106353
              f(x_k) + sum(|constr|) 3.435021213384252400
              f(x_0) 15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.750000 sec. Elapsed time: 0.740000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.65297 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning f_k 3.435021211904145700
```

sum(constr)	0.000000001480231254
f(x_k) + sum(constr)	3.435021213384376700
f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.703125 sec. Elapsed time: 0.720000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.65791 seconds
Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480205821
	f(x_k) + sum(constr)	3.435021213384351400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.703125 sec. Elapsed time: 0.719000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.64346 seconds
Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904146600
	sum(constr)	0.000000001480164542
	f(x_k) + sum(constr)	3.435021213384311000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71
CPU time: 0.703125 sec. Elapsed time: 0.727000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66072 seconds
Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k        3.435021211904145700
              sum(|constr|)                    0.000000001480157221
              f(x_k) + sum(|constr|)            3.435021213384303000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 304
CPU time: 1.140625 sec. Elapsed time: 1.086000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.73449 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k        3.452954261342667600
              sum(|constr|)                    0.000000000662669677
              f(x_k) + sum(|constr|)            3.452954262005337100
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 18 GradEv 16 ConstrEv 16 ConJacEv 16 Iter 15 MinorIter 254
CPU time: 0.703125 sec. Elapsed time: 0.707000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.67008 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k        7.726961333409970000
              sum(|constr|)                    0.000000000101935752
              f(x_k) + sum(|constr|)            7.726961333511905400
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv 116 GradEv 114 ConstrEv 114 ConJacEv 114 Iter 78 MinorIter 3814
CPU time: 5.078125 sec. Elapsed time: 5.113000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.66694 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      484.400502616611670000
              sum(|constr|)                    1.562544185433707000
              f(x_k) + sum(|constr|)            485.963046802045370000
              f(x_0)                          15.000000000000000000
```

```
Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized
```

```
FuncEv 1120 GradEv 1118 ConstrEv 1118 ConJacEv 1118 Iter 306 MinorIter 5723
CPU time: 29.609375 sec. Elapsed time: 29.565000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)
```

```
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.97519 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      451.096033563478440000
              sum(|constr|)                    2.951952455222124800
              f(x_k) + sum(|constr|)            454.047986018700560000
              f(x_0)                          15.000000000000000000
```

```
Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized
```

```
FuncEv 5046 GradEv 5044 ConstrEv 5044 ConJacEv 5044 Iter 981 MinorIter 4457
CPU time: 103.640625 sec. Elapsed time: 103.556000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)
```

```
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.67425 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      464.293309167079660000
              sum(|constr|)                    2.333444609004280400
              f(x_k) + sum(|constr|)            466.626753776083940000
              f(x_0)                          15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 1396 GradEv 1394 ConstrEv 1394 ConJacEv 1394 Iter 372 MinorIter 7355
 CPU time: 29.265625 sec. Elapsed time: 29.271000 sec.
 Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.64609 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

Problem: --- 1: Optimal Robot Path Planning	f_k	595.736679326147960000
	sum(constr)	0.601619964682989510
	f(x_k) + sum(constr)	596.338299290830950000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=32.
 SNOPT 7.2-12 NLP code
 Major iteration limit reached

FuncEv 21533 GradEv 21531 ConstrEv 21531 ConJacEv 21531 Iter 6498 MinorIter 7230
 CPU time: 496.843750 sec. Elapsed time: 510.135000 sec.
 Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)
 The returned solution may be incorrect.
 Problem type appears to be: con
 Time for symbolic processing: 0.95421 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

Problem: --- 1: Optimal Robot Path Planning	f_k	4.519582248850640300
	sum(constr)	0.000000009493783388
	f(x_k) + sum(constr)	4.519582258344423800
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 557 GradEv 555 ConstrEv 555 ConJacEv 555 Iter 156 MinorIter 6388
 CPU time: 16.859375 sec. Elapsed time: 17.116000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.8554 seconds

Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.438242338534188900
	sum(constr)	0.000000000063296444
	f(x_k) + sum(constr)	3.438242338597485400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 198

CPU time: 1.093750 sec. Elapsed time: 1.097000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.9104 seconds

Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.502338637726427200
	sum(constr)	0.000000000032705456
	f(x_k) + sum(constr)	3.502338637759132600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 20 GradEv 18 ConstrEv 18 ConJacEv 18 Iter 17 MinorIter 446

CPU time: 1.156250 sec. Elapsed time: 1.246000 sec.

Problem type appears to be: con

Time for symbolic processing: 1.177 seconds

Starting numeric solver

===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====

Problem: --- 1: Optimal Robot Path Planning	f_k	693.115891057290580000
	sum(constr)	0.967382625395210800
	f(x_k) + sum(constr)	694.083273682685790000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 5249 GradEv 5247 ConstrEv 5247 ConJacEv 5247 Iter 982 MinorIter 5737

CPU time: 108.906250 sec. Elapsed time: 111.916000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.83287 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	722010.536738344000000000
	sum(constr)	3.307882455739064000
	f(x_k) + sum(constr)	722013.844620799760000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=10. INFORM=41.

SNOPT 7.2-12 NLP code

Current point cannot be improved

FuncEv 512 GradEv 510 ConstrEv 511 ConJacEv 510 Iter 164 MinorIter 5844

CPU time: 16.906250 sec. Elapsed time: 17.492000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 1.0144 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	73.117284723956942000
	sum(constr)	7.538766695385896300
	f(x_k) + sum(constr)	80.656051419342845000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 28688 GradEv 28686 ConstrEv 28686 ConJacEv 28686 Iter 4803 MinorIter 6736

CPU time: 572.437500 sec. Elapsed time: 584.768000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.86128 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k 1112139.2544620943000000000
              sum(|constr|)          9.416253059600316900
              f(x_k) + sum(|constr|) 1112148.6707151539000000000
              f(x_0)          15.0000000000000000000
```

Solver: snopt. EXIT=10. INFORM=41.

SNOPT 7.2-12 NLP code

Current point cannot be improved

FuncEv 3149 GradEv 3147 ConstrEv 3148 ConJacEv 3147 Iter 843 MinorIter 9216

CPU time: 71.906250 sec. Elapsed time: 73.656000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.74689 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k      68.809322053389423000
              sum(|constr|)      19.568580288692388000
              f(x_k) + sum(|constr|)  88.377902342081811000
              f(x_0)      15.0000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 165 GradEv 163 ConstrEv 164 ConJacEv 163 Iter 67 MinorIter 4567

CPU time: 6.875000 sec. Elapsed time: 6.959000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.95902 seconds

Starting numeric solver

===== * * * ===== * * *

TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k      20.140769985537453000
              sum(|constr|)      6.999492846722385600
```


$f(x_k) + \text{sum}(\text{constr})$	27.140262832259840000
$f(x_0)$	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 1604 GradEv 1602 ConstrEv 1602 ConJacEv 1602 Iter 413 MinorIter 5317
 CPU time: 35.359375 sec. Elapsed time: 35.443000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.73252 seconds

Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

Problem: --- 1: Optimal Robot Path Planning f_k 18858733.393125046000000000
 $\text{sum}(|\text{constr}|)$ 15.050847695428125000
 $f(x_k) + \text{sum}(|\text{constr}|)$ 18858748.443972740000000000
 $f(x_0)$ 15.000000000000000000

Solver: snopt. EXIT=10. INFORM=41.
 SNOPT 7.2-12 NLP code
 Current point cannot be improved

FuncEv 998 GradEv 996 ConstrEv 997 ConJacEv 996 Iter 309 MinorIter 9498
 CPU time: 27.953125 sec. Elapsed time: 28.191000 sec.

Warning: Solver returned ExitFlag = 10

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.70799 seconds

Starting numeric solver

===== * * * ===== * * *
 TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09

Problem: --- 1: Optimal Robot Path Planning f_k -29.122398130831023000
 $\text{sum}(|\text{constr}|)$ 1.308043734475368600
 $f(x_k) + \text{sum}(|\text{constr}|)$ -27.814354396355654000
 $f(x_0)$ 15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 9456 GradEv 9454 ConstrEv 9454 ConJacEv 9454 Iter 1533 MinorIter 12415
CPU time: 168.828125 sec. Elapsed time: 169.356000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.68959 seconds

Starting numeric solver

===== * * * ===== * * *

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```
Problem: --- 1: Optimal Robot Path Planning    f_k      94.665155021533863000
              sum(|constr|)      2.476896781581634100
              f(x_k) + sum(|constr|)  97.142051803115493000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 72 GradEv 70 ConstrEv 70 ConJacEv 70 Iter 31 MinorIter 1751

CPU time: 2.765625 sec. Elapsed time: 2.785000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.82709 seconds

Starting numeric solver

===== * * * ===== * * *

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```
Problem: --- 1: Optimal Robot Path Planning    f_k      201.550611889990880000
              sum(|constr|)      3.383590255841954600
              f(x_k) + sum(|constr|)  204.934202145832840000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 89 GradEv 87 ConstrEv 87 ConJacEv 87 Iter 29 MinorIter 2799

CPU time: 3.562500 sec. Elapsed time: 3.530000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.73946 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	302.369715096414610000
	sum(constr)	0.528281583271436370
	f(x_k) + sum(constr)	302.897996679686060000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 50 GradEv 48 ConstrEv 48 ConJacEv 48 Iter 21 MinorIter 2831

CPU time: 3.140625 sec. Elapsed time: 3.131000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.71898 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	6.429617026499084200
	sum(constr)	0.000000000074810449
	f(x_k) + sum(constr)	6.429617026573894600
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 443 GradEv 441 ConstrEv 441 ConJacEv 441 Iter 165 MinorIter 4513

CPU time: 12.218750 sec. Elapsed time: 12.246000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.73256 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	160423.491899918100000000
	sum(constr)	2.247190742905514700
	f(x_k) + sum(constr)	160425.739090660990000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 3411 GradEv 3409 ConstrEv 3409 ConJacEv 3409 Iter 873 MinorIter 10764
CPU time: 72.593750 sec. Elapsed time: 72.633000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.69621 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	105631.804377596200000000
	sum(constr)	5.867347418032657900
	f(x_k) + sum(constr)	105637.671725014240000000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 12957 GradEv 12955 ConstrEv 12955 ConJacEv 12955 Iter 2603 MinorIter 14405
CPU time: 241.953125 sec. Elapsed time: 242.505000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.84287 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	80.998833431819563000
	sum(constr)	79.288685325689698000
	f(x_k) + sum(constr)	160.287518757509250000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=1. INFORM=31.

SNOPT 7.2-12 NLP code

Iteration limit reached

FuncEv 877 GradEv 875 ConstrEv 876 ConJacEv 875 Iter 222 MinorIter 21660
CPU time: 31.437500 sec. Elapsed time: 31.838000 sec.

Warning: Solver returned ExitFlag = 1

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.78078 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      35.227064996296406000
              sum(|constr|)      4.295940803676080200
              f(x_k) + sum(|constr|) 39.523005799972488000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=1. INFORM=31.
SNOPT 7.2-12 NLP code
Iteration limit reached

FuncEv 194 GradEv 192 ConstrEv 193 ConJacEv 192 Iter 47 MinorIter 21660
CPU time: 18.203125 sec. Elapsed time: 18.582000 sec.
Warning: Solver returned ExitFlag = 1
> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 1.0542 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      1109.906510231223400000
              sum(|constr|)      2.090545617199600900
              f(x_k) + sum(|constr|) 1111.997055848422900000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized

FuncEv 1007 GradEv 1005 ConstrEv 1005 ConJacEv 1005 Iter 280 MinorIter 10646
CPU time: 27.390625 sec. Elapsed time: 27.530000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.74491 seconds
Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
```

```
=====
Problem: --- 1: Optimal Robot Path Planning    f_k      4.113469370955211700
              sum(|constr|)      0.000000001464902366
              f(x_k) + sum(|constr|)      4.113469372420113700
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 81 GradEv 79 ConstrEv 79 ConJacEv 79 Iter 75 MinorIter 1177
 CPU time: 3.781250 sec. Elapsed time: 3.838000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.72508 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      4.350866682696910500
              sum(|constr|)      0.000000015252704461
              f(x_k) + sum(|constr|)      4.350866697949615300
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=0. INFORM=1.
 SNOPT 7.2-12 NLP code
 Optimality conditions satisfied

FuncEv 24 GradEv 22 ConstrEv 22 ConJacEv 22 Iter 21 MinorIter 317
 CPU time: 1.078125 sec. Elapsed time: 1.093000 sec.
 Problem type appears to be: con
 Time for symbolic processing: 0.70152 seconds
 Starting numeric solver

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k      46.343248125816586000
              sum(|constr|)      0.051702320831687569
              f(x_k) + sum(|constr|)      46.394950446648274000
              f(x_0)      15.000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.
 SNOPT 7.2-12 NLP code
 Nonlinear infeasibilities minimized

FuncEv 144 GradEv 142 ConstrEv 142 ConJacEv 142 Iter 51 MinorIter 685
 CPU time: 3.531250 sec. Elapsed time: 3.562000 sec.
 Warning: Solver returned ExitFlag = 4
 > In ezsolve (line 237)
 In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.82663 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k  187149.2496514925200000000
              sum(|constr|)                    1.095454266747537500
              f(x_k) + sum(|constr|) 187150.3451057592800000000
              f(x_0)                    15.0000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 5969 GradEv 5967 ConstrEv 5967 ConJacEv 5967 Iter 1512 MinorIter 4202

CPU time: 120.218750 sec. Elapsed time: 120.643000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 1.211 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k  152853.7385458962800000000
              sum(|constr|)                    1.606342138755845400
              f(x_k) + sum(|constr|) 152855.3448880350300000000
              f(x_0)                    15.0000000000000000000
```

Solver: snopt. EXIT=4. INFORM=13.

SNOPT 7.2-12 NLP code

Nonlinear infeasibilities minimized

FuncEv 199 GradEv 197 ConstrEv 197 ConJacEv 197 Iter 77 MinorIter 2279

CPU time: 6.078125 sec. Elapsed time: 6.125000 sec.

Warning: Solver returned ExitFlag = 4

> In ezsolve (line 237)

In robot_change_of_obs_rad (line 121)

The returned solution may be incorrect.

Problem type appears to be: con

Time for symbolic processing: 0.74869 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

```
Problem: --- 1: Optimal Robot Path Planning    f_k    107160.409840361540000000
              sum(|constr|)          0.473299693528894780
              f(x_k) + sum(|constr|) 107160.883140055070000000
              f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=4.  INFORM=13.
SNOPT 7.2-12 NLP code
Nonlinear infeasibilities minimized
```

```
FuncEv  484 GradEv  482 ConstrEv  482 ConJacEv  482 Iter  141 MinorIter 2145
CPU time: 11.796875 sec. Elapsed time: 11.924000 sec.
Warning: Solver returned ExitFlag = 4
> In ezsolve (line 237)
    In robot_change_of_obs_rad (line 121)
The returned solution may be incorrect.
Problem type appears to be: con
Time for symbolic processing: 0.75124 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          7.691465534835533200
              sum(|constr|)          0.000000001895959325
              f(x_k) + sum(|constr|)  7.691465536731492100
              f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   61 GradEv   59 ConstrEv   59 ConJacEv   59 Iter   44 MinorIter 1295
CPU time: 2.390625 sec. Elapsed time: 2.398000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.68443 seconds
Starting numeric solver
```

```
===== * * * ===== * * *
TOMLAB - Tomlab user Demo license 999100. Valid to 2016-05-09
=====
```

```
Problem: --- 1: Optimal Robot Path Planning    f_k          3.451771720008998100
              sum(|constr|)          0.000000000432058456
              f(x_k) + sum(|constr|)  3.451771720441056500
              f(x_0)          15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   18 GradEv   16 ConstrEv   16 ConJacEv   16 Iter   15 MinorIter 120
CPU time: 0.796875 sec. Elapsed time: 0.788000 sec.
```


Problem type appears to be: con

Time for symbolic processing: 0.81515 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145200
	sum(constr)	0.000000001480172660
	f(x_k) + sum(constr)	3.435021213384318100
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 254

CPU time: 0.968750 sec. Elapsed time: 0.979000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.72929 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904140300
	sum(constr)	0.000000001480345687
	f(x_k) + sum(constr)	3.435021213384486000
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 158

CPU time: 0.750000 sec. Elapsed time: 0.785000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.69718 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480231254
	f(x_k) + sum(constr)	3.435021213384376700
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.843750 sec. Elapsed time: 0.828000 sec.

Problem type appears to be: con

Time for symbolic processing: 0.77539 seconds

Starting numeric solver

===== * * * ===== * * *

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=====

Problem: --- 1: Optimal Robot Path Planning	f_k	3.435021211904145700
	sum(constr)	0.000000001480205821
	f(x_k) + sum(constr)	3.435021213384351400
	f(x_0)	15.000000000000000000

Solver: snopt. EXIT=0. INFORM=1.

SNOPT 7.2-12 NLP code

Optimality conditions satisfied

FuncEv 19 GradEv 17 ConstrEv 17 ConJacEv 17 Iter 16 MinorIter 71

CPU time: 0.796875 sec. Elapsed time: 0.821000 sec.

Trial>>