

YALMIP Wiki

Solvesdp

[solvesdp](#) is the common function for solving standard optimization problems.

Syntax

```
diagnostics = solvesdp(Constraints, Objective, options)
```

Examples

A linear program $\{\min c^T x \text{ subject to } Ax \leq b\}$ can be solved with the following piece of code

```
x = sdpvar(length(c), 1);
F = [A*x<=b];
h = c'*x;
solvesdp(F, h);
solution = double(x);
```

If we only look for a feasible solution, we can omit the objective function

```
solvesdp(F);
```

A diagnostic structure is returned from solvesdp, which can be used, e.g, to check feasibility (see [yalmiperror](#) for the error codes)

```
diagnostics = solvesdp(F);
if diagnostics.problem == 0
    disp('Feasible')
elseif diagnostics.problem == 1
    disp('Infeasible')
else
    disp('Something else happened')
end
```

Solving the feasibility problem with a particular solver, e.g. [QUADPROG](#), can be done with

```
solvesdp(F, [], sdpsettings('solver', 'quadprog'));
```

Minimization is assumed, hence if we want to maximize, we simply flip the sign of the objective.

```
solvesdp(F, -h);
```

For more examples, check out the [Examples](#) and [Tutorials](#).

Related commands

[sdpvar](#), [set](#), [sdpsettings](#), [solvesos](#), [solvemoment](#), [solvemp](#)

Most common
[sdpvar](#)

[sdpsettings](#)

[solvesdp](#)

Variable declaration
[binvar](#)

[blkvar](#)

[intvar](#)

[sdpvar](#)

[semivar](#)

[uncertain](#)

Variable manipulation
[assign](#)

[coefficients](#)

[degree](#)

[dissect](#)

[double](#)

[hessian](#)

[is](#)

[jacobian](#)

[kyp](#)

[linearize](#)

[lowrank](#)

[monolist](#)

[plot](#)

[polynomial](#)

[sdisplay](#)

[sparse](#)

[unblkdiag](#)

Operators

[abs](#)

[entropy](#)

[geomean](#)

[huber](#)

[iff](#)

[implies](#)

[logdet](#)

[logistic](#)

[logsumexp](#)

[median](#)

[nnz](#)

sdpfun
sort
Constraints
alldifferent
binary
checkset
cone
cut
dilate
dual
dualize
hull
imagemodel
integer
is
ismember
primalize
rank
rcone
robustify
set
sos
sosd
Optimization
optimizer
solvebilevel
solvemp
solvemoment
solvesdp
solvesos
sdpsettings
Auxillary
binmodel
export
saveampl
savesdpafile
yalmip
yalmiperror
yalmiptest
Internal
clean
depends
recover
see

