

INVERSION FOR 2×2 BLOCK STRUCTURES

```
procedure HInvert(var m, var x)
```

```
if m subdivided ( $2 \times 2$ ) then
```

```
else
```

```
  Invert(m)
```

```
end if
```

```
{ fullmatrix inversion }
```

INVERSION FOR 2×2 BLOCK STRUCTURES

```
procedure HInvert(var m, var x)
if m subdivided ( $2 \times 2$ ) then
  HInvert(m11, x11)      { destroys m11, x11 =  $M_{11}^{-1}$  }
else
  Invert(m)                { fullmatrix inversion }
end if
```

INVERSION FOR 2×2 BLOCK STRUCTURES

procedure HInvert(**var** m, **var** x)

if m subdivided (2×2) **then**

HInvert(m_{11} , x_{11}) { destroys m_{11} , $x_{11} = M_{11}^{-1}$ }

$x_{12} := x_{11} \odot m_{12}$ { $x_{12} = M_{11}^{-1} M_{12}$ }

$x_{21} := m_{21} \odot x_{11}$ { $x_{21} = M_{21} M_{11}^{-1}$ }

else

Invert(m) { fullmatrix inversion }

end if

INVERSION FOR 2×2 BLOCK STRUCTURES

procedure HInvert(**var** m, **var** x)

if m subdivided (2×2) **then**

HInvert(m_{11} , x_{11}) { destroys m_{11} , $x_{11} = M_{11}^{-1}$ }

$x_{12} := x_{11} \odot m_{12}$ { $x_{12} = M_{11}^{-1} M_{12}$ }

$x_{21} := m_{21} \odot x_{11}$ { $x_{21} = M_{21} M_{11}^{-1}$ }

$m_{22} := m_{22} \ominus m_{21} \odot x_{12}$ { $m_{22} = S$ }

HInvert(m_{22} , x_{22}) { $m_{22} = S^{-1}$, destroys x_{22} }

else

Invert(m) { fullmatrix inversion }

end if

INVERSION FOR 2×2 BLOCK STRUCTURES

procedure HInvert(**var** m, **var** x)

if m subdivided (2×2) **then**

HInvert(m_{11} , x_{11}) { destroys m_{11} , $x_{11} = M_{11}^{-1}$ }

$x_{12} := x_{11} \odot m_{12}$ { $x_{12} = M_{11}^{-1} M_{12}$ }

$x_{21} := m_{21} \odot x_{11}$ { $x_{21} = M_{21} M_{11}^{-1}$ }

$m_{22} := m_{22} \ominus m_{21} \odot x_{12}$ { $m_{22} = S$ }

HInvert(m_{22} , x_{22}) { $m_{22} = S^{-1}$, destroys x_{22} }

$m_{12} := -x_{12} \odot m_{22}$ { $m_{12} = -M_{11}^{-1} M_{12} S^{-1}$ }

$m_{11} := m_{11} \ominus m_{12} \odot x_{21}$ { $m_{11} = M_{11}^{-1} + M_{11}^{-1} M_{12} S^{-1} M_{21} M_{11}^{-1}$ }

$m_{21} := -m_{22} \odot x_{21}$ { $m_{21} = -S^{-1} M_{21} M_{11}^{-1}$ }

else

Invert(m) { fullmatrix inversion }

end if