```
Exit[]

PrependTo[$Path, "D:\\Users\\Johannes\\Promotion\\SVN Rep\\Mathematica\\Packages"];
<< JoFin`

n = 3;

S[1] = s; S[2] = G; S[3] = H;

coefSDE = {{0, 0, Sign[G] σ^2}, {{σ S, 0, 0}, {q (G + π) σ, 0, 0}, {-Sign[G] q σ, 0, 0}},
  {{1, 0, 0}, {0, 0, 0}, {0, 0, 0}}}; MatrixForm /@ coefSDE
dfkA = DFK[V, coefSDE]
```

$$\left\{\begin{pmatrix} 0 \\ 0 \\ \sigma^2\,\text{Sign}[G] \end{pmatrix}, \begin{pmatrix} S\,\sigma & 0 & 0 \\ (G+\pi)\,q\,\sigma & 0 & 0 \\ -q\,\sigma\,\text{Sign}[G] & 0 & 0 \end{pmatrix}, \begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix}\right\}$$

$$\sigma^2\,\text{Sign}[G]\,V^{(0,0,0,1)}[t,s,G,H] + \frac{1}{2}\left(q^2\,\sigma^2\,\text{Sign}[G]^2\,V^{(0,0,0,2)}[t,s,G,H] - 2\,(G+\pi)\,q^2\,\sigma^2\,\text{Sign}[G]\,V^{(0,0,1,1)}[t,s,G,H] + (G+\pi)^2\,q^2\,\sigma^2\,V^{(0,0,2,0)}[t,s,G,H] - 2\,q\,S\,\sigma^2\,\text{Sign}[G]\,V^{(0,1,0,1)}[t,s,G,H] + 2\,(G+\pi)\,q\,S\,\sigma^2\,V^{(0,1,1,0)}[t,s,G,H] + S^2\,\sigma^2\,V^{(0,2,0,0)}[t,s,G,H]\right) + V^{(1,0,0,0)}[t,s,G,H]$$

```
Simplify[(dfkA /. q → 1) - (dfkA /. q → -1)] / (2 S σ^2)
```

$$-\text{Sign}[G]\,V^{(0,1,0,1)}[t,s,G,H] + (G+\pi)\,V^{(0,1,1,0)}[t,s,G,H]$$

```
coef = CoefficientArrays[dfkA, q, Symmetric → True]; MatrixForm /@ coef
```

$$\left\{\sigma^2\,\text{Sign}[G]\,V^{(0,0,0,1)}[t,s,G,H] + \frac{1}{2}\,S^2\,\sigma^2\,V^{(0,2,0,0)}[t,s,G,H] + V^{(1,0,0,0)}[t,s,G,H],\ \left(-S\,\sigma^2\,\text{Sign}[G]\,V^{(0,1,0,1)}[t,s,G,H] + (G+\pi)\,S\,\sigma^2\,V^{(0,1,1,0)}[t,s,G,H]\right),\ \left(\tfrac{1}{2}\,\sigma^2\,\text{Sign}[G]^2\,V\right.\right.$$