

[Help](#)

```
#include "blackkarasinski1d.h"
#include "chk.h"
#include "error_msg.h"
#include "premia_obj.h"
#include "model.h"
#include "enums.h"

double MOD(GetYield)(TYPEMOD *pt)
{
    VAR *Par;
    Par = lookup_premia_enum_par(&(pt->flat_flag), 0);
    return Par[0].Val.V_PDOUBLE;
}

char *MOD(GetCurve)(TYPEMOD *pt)
{
    VAR *Par;
    Par = lookup_premia_enum_par(&(pt->flat_flag), 1);
    return Par[0].Val.V_FILENAME;
}

static int MOD(Init)(Model *model)
{
    VAR *Par;
    TYPEMOD *pt = (TYPEMOD *) (model->TypeModel);

    if (model->init == 0)
    {
        model->init = 1;
        model->nvar = 0;
        pt->T.Vname = "Current Date";
        pt->T.Vtype = DATE;
        pt->T.Val.V_DATE = 0.0;
        pt->T.Viter = ALLOW;
        model->nvar++;

        pt->flat_flag.Vname = "Initial Yields Curve";
        pt->flat_flag.Vtype = ENUM;
    }
}
```

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    pt->flat_flag.Val.V_ENUM.value = 0;
    pt->flat_flag.Val.V_ENUM.members = &PremiaEnumFlat;
    pt->flat_flag.Viter = FORBID;
    model->nvar++;
    Par = lookup_premia_enum_par(&(pt->flat_flag), 0);
    Par[0].Vname = "Yield Value";
    Par[0].Vtype = PDOUBLE;
    Par[0].Val.V_PDOUBLE = 0.05;
    Par[0].Viter = ALLOW;
    Par = lookup_premia_enum_par(&(pt->flat_flag), 1);
    Par[0].Vname = "Yield Curve";
    Par[0].Vtype = FILENAME;
    Par[0].Val.V_FILENAME = NULL;
    Par[0].Viter = FORBID;

    pt->r0.Vname = "Current Rate";
    pt->r0.Vtype = PDOUBLE;
    pt->r0.Val.V_PDOUBLE = 0.05;
    pt->r0.Viter = ALLOW;
    model->nvar++;

    pt->a.Vname = "Speed of Mean Reversion";
    pt->a.Vtype = DOUBLE;
    pt->a.Val.V_DOUBLE = 0.15;
    pt->a.Viter = ALLOW;
    model->nvar++;

    pt->Sigma.Vname = "Volatility";
    pt->Sigma.Vtype = PDOUBLE;
    pt->Sigma.Val.V_PDOUBLE = 0.1;
    pt->Sigma.Viter = ALLOW;
    model->nvar++;
}

Par = lookup_premia_enum_par(&(pt->flat_flag), 1);
if (Par[0].Val.V_FILENAME == NULL)
{
    if ((Par[0].Val.V_FILENAME = malloc(sizeof(char) * MAX_PATH_LEN)) == NULL)
        return MEMORY_ALLOCATION_FAILURE;
}

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        sprintf(Par[0].Val.V_FILENAME, "%s%sinitialyield.dat", premia_data_dir, pa
    }
    return OK;
}
TYPEMOD BlackKarasinski1d;
MAKEMOD(BlackKarasinski1d);
```