

Help

```

#ifndef _SABR_H
#define _SABR_H

#include "math/ImportanceSampling_jl/src/Model.hpp"
#include "pnl/pnl_matrix.h"
#include "pnl/pnl_random.h"

/**
 * SABR BaseModel
 *
 *
 * \ f[ dS^i_t = interest S^i_t dt + \ sigma_t^i (\ sigma^i_t)^{\ \ beta^i} dB^i_t
 * \ f[ d\ sigma^i_t = \ nu^i \ sigma_t^i (\ rho dB^i_t + \ sqrt{1 - \ rho^2} d\
 * where B and \ f$ \ tilde B \ f$ are independent and
 * \ f[ d\ langle B \ rangle_t = \ Gamma_S dt = (\ rho + diag(1 - \ rho)) dt \ f
 * \ f[ d\ langle \ tilde B \ rangle_t = \ Gamma_\ sigma dt = (\ xi + diag(1 - \
 *
 * This can be equivalently rewritten
 * \ f[ dS^i_t = interest S^i_t dt + \ sigma_t^i (\ sigma^i_t)^{\ \ beta^i} dB^i_t
 * \ f[ d\ sigma^i_t = \ nu^i \ sigma_t^i dW^i_t \ f]
 * where
 * \ f[ d\ langle B \ rangle_t = \ Gamma_S dt = (\ rho + diag(1 - \ rho)) dt \ f
 * \ f[ d\ langle B, W \ rangle_t = \ gamma \ Gamma_S dt \ f]
 * \ f[ d\ langle W \ rangle_t = (\ gamma^2 \ Gamma_S + (1 - \ gamma^2) \ Gamma_
 */
class SABRModel : public StocVolModel
{
private:
    PnlVect *beta; /*!< SABR exponent */

public:
    SABRModel();
    SABRModel(const Param &P);
    ~SABRModel();
    void print() const;
    virtual void path();
};

#endif /* _SABR_H */

```